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The Journal of Speech and Hearing Disorders

(Formerly THE JOURNAL OF SPEECH DISORDERS)

Published by the American Speech and Hearing Association

VOLUME 13 DECEMBER, 1948 NUMBER 4

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Issued Quarterly

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The Journal of Speech and Hearing Disorders

(Formerly THE JOURNAL OF SPEECH DISORDERS)

VOLUME 13 DECEMBER, 1948 NUMBER 4

PROGRAM

Twenty-Fourth Annual Conference of the American Speech and Hearing Association

HOTELS STATLER AND CARLTON

WASHINGTON, D. C.

The American Speech and Hearing Association will hold its 1948 Convention December 27, 28, 29 and 30, in conjunction with the Speech Association of America, at the Statler and Carlton Hotels, Washington, D. C.

The meetings of officers and councillors are open to all members.

Short courses are arranged by the Committee on Education for the partial purpose of providing opportunities for advancement in membership. Credit in the amount of one semester hour is granted for each short course. Attendance at the lecture, an outline of the subject matter presented, and such subsequent bibliographical work as may be assigned by the instructor are the requirements for credit. No fee is charged.

Each speaker is required to present to his chairman a typewritten copy of his paper for publication in the *Journal of Speech and Hearing Disorders.*

For information on the tour of the Army Aural Rehabilitation Center, see program for Thursday afternoon, December 30. The Aural Rehabilitation Center is located at Forest Glen, Maryland, and is near the Silver Spring station of the Baltimore and Ohio Railroad. The tour of the Center is the final event on the program. Members travelling west on the B & O may wish to take their luggage with them to the Center and go on to the Silver Spring station at the end of the tour, thus avoiding a return trip downtown. Announcement of train times will be made at the first business meeting, Tuesday, December 28, at 7:45 p. m.

Monday, December 27

7:30 p.m. Meeting of officers and councillors. (Federal Room, Statler Hotel.)

Tuesday, December 28

8:30 a.m. Registration. (Statler Hotel.)

9:00 a.m. Joint meeting with the Speech Association of America, the American Education Theatre Association, and the Committee on Debate Materials of the National University Extension Association. (Presidential Ballroom, Statler Hotel.)

VOICE AND ARTICULATION DISORDERS

10:45 a.m., Carlton Room, Carlton Hotel

Chairman: James F. Curtis, State University of Iowa

10:45 a.m. Articulation Problems of Physically Handicapped Children. *Gladys Reid Jann, New York State College for Teachers.*

10:57 a.m. A Study of the Misarticulation of [r] in Children from Kindergarten through Third Grade. *McKenzie W. Buck, Purdue University.*

11.09 a.m. Definition of a Voice Quality Called X. *Charlotte E. Cleeland, State College of Washington.*

11:33 a.m. Differential Treatment of Contact Ulcer and Vocal Nodules. *Georgiana M Peacher, Veterans Administration Mental Hygiene Clinic, Philadelphia.*

11:45 a.m. Discussion.

12:00 a.m. Adjournment.

12:15 p.m. Alumni Luncheons. (Tickets on sale at Information Desk, Statler Hotel.)

FEDERAL AND STATE SPEECH AND HEARING PROGRAMS

2:00 p.m., Carlton Room, Carlton Hotel

Chairman: Merle Ansberry, Veterans Administration, Washington

2:05 p.m. A Community Welfare Agency and a University Cooperating in a Speech and Hearing Program. *George J. Fortune, Cleveland Hearing and Speech Center.*

2:20 p.m. Organizing a State Program in Speech and Hearing Rehabilitation. *James M. Mullendore, University of Virginia.*

2:35 p.m. Bargain Daze in Speech Correction. *Spencer F. Brown, University of Iowa.*

2:50 p.m. A National Program of Speech and Hearing Rehabilitation. *Jayne Shover, National Society for Crippled Children and Adults.*

3:05 p.m. The Veterans Administration Program in Speech Pathology. *H. M. Hildreth, Psychiatry and Neurology Division, Veterans Administration.*

3:35 p.m. Discussion.

3:45 p.m. Adjournment.

AUDIOLOGY: A FIELD OF SPEECH

Joint Meeting with SAA

4:00 p.m., Federal Room, Statler Hotel

Chairman: Robert West, University of Wisconsin

4:00 p.m. The Civilian Hearing Clinic. *William Hardy, Johns Hopkins University.*

4:20 p.m. Bone Conduction Audiometry. *Scott Reger, University of Iowa.*

4:35 p.m. Sensitivity to Intensity Change in Perceptive Loss Cases. *Lee Doerfler, University of Pittsburgh.*
4:50 p.m. Psychological Testing of Acoustically Handicapped Children. *Helmer J. Myklebust, Northestern University.*
5:10 p.m. Discussion.
5:20 p.m. Adjournment.

SHORT COURSE: THE ORGANIZATION OF A PUBLIC SCHOOL SPEECH CORRECTION PROGRAM
6:30 p.m., Federal Room, Statler Hotel
Instructor: Stanley Ainsworth, Ohio State University

7:45 p.m. ASHA Business meeting. (Carlton Room, Carlton Hotel.)

Wednesday, December 29

CLINICAL TECHNIQUES
9:00 a.m., Carlton Room, Carlton Hotel
Chairman: Lou Kennedy, Louisiana State University

9:00 a.m. Special Problems in Speech Therapy for the Cerebral Palsied. *Berneice R. Rutherford, The Rehabilitation Center, St. Paul.*
9:15 a.m. Symposium: Working with Parents and Teachers of Speech Handicapped Children.
Preschool Cridren. *Jane Beasley, University of Michigan.*
Stuttering Children. *Hildred Schuell, Veterans Administration Hospital, Minneapolis.*
Rural Children. *Harriet M. Dunn, Vermont Association for Crippled Children.*
10:00 a.m. Discussion.
10:25 a.m. Adjournment.

STUTTERING
10:30 a.m., Carlton Room, Carlton Hotel
Chairman: Spencer F. Brown, University of Iowa

10:30 a.m. Conditions under which Stuttering is Eliminated or Reduced. *Oliver Bloodstein, Brooklyn College.*
10:45 a.m. Group Therapy for Adolescent Stuttering. *Ruth Lundin, Cleveland Hearing and Speech Center.*
11:00 a.m. The Parental Environment of Stuttering Children. *A. C. LaFollette, Ohio University.*
11:15 a.m. Emotional Problems of Stutterers under the Age of Five. *Philip J. Glasner, Johns Hopkins Hospital.*
11:30 a.m. Effect of Prior Rehearsal on Stuttering Adaptation. *George E. Wischner, University of Iowa.*
11:45 a.m. Discussion.
12:00 n. Adjournment.

12:15 p.m. Joint luncheon with AETA, NUEA, SAA. (Presidential Ballroom, Statler Hotel.)

HEARING PROBLEMS
2:00 p.m., Carlton Room, Carlton Hotel
Chairman: William G. Hardy, Johns Hopkins University

2:05 p.m. The Role of the Otologist in Audiology. *John E. Bordley, Johns Hopkins University.*
2:20 p.m. Testing the Hearing of Children of Pre-School Age. *Harold Westlake, Northwestern University.*
2:35 p.m. Some Basic Considerations in Teaching Language to Children with Impaired Hearing. *Louis M. DiCarlo, Syracuse University.*
2:50 p.m. Hearing Aid Amplification for Optimum Speech Reproduction. *Boyd Sheets and Lee Hedgecock, University of Minnesota.*
3:05 p.m. Recent Developments in the Visual-Hearing Method of Training Those with Impaired Hearing. *Marie K. Mason, Ohio State University.*
3:20 p.m. Discussion.
3:45 p.m. Adjournment.

EXPERIMENTAL PHONETICS
Joint Meeting with SAA
4:00 p.m., Federal Room, Statler Hotel
Chairman: Gordon E. Peterson, Bell Telephone Laboratories

4:05 p.m. Vibration of the Bones of the Head and Chest During Sustained Vowel Sounds. *James Mullendore, University of Virginia.*
4:20 p.m. Problems of Vocal Resonance. *Wilbert Pronovost, Boston University.*
4:35 p.m. The Audibility of the Voiceless Consonants as a Function of Intensity. *Gilbert C. Tolhurst, Florida State University.*
4:50 p.m. Revised Concept of Rate. *James C. Kelly and Mack D. Steer, Purdue University.*
5:05 p.m. Speech Intelligibility: Voice Variables Related to Stress. *G. L. Draegert, Purdue University.*
5:15 p.m. Natural Frequency, Intensity, and Duration of Vowels. *John W. Black, Kenyon College.*
5:30 p.m. Adjournment.

SHORT COURSE: CLINICAL AUDIOMETRY
6:30 p.m., Federal Room, Statler Hotel
Instructor: Raymond Carhart, Northwestern University

Thursday, December 30

PERSONALITY PROBLEMS AND SPEECH DEFECTS
9:00 a.m., Federal Room, Statler Hotel
Chairman: Kenneth S. Wood, University of Oregon

9:05 a.m. The Effects of Misinterpreting the Causes of Articulatory Speech Defects. *Darrel J. Mase, Newark State Teachers College.*
9:20 a.m. Diagnosis of Personality in Speech Therapy. *Virgil A. Anderson, Stanford University.*
9:35 a.m. Speech Problems and Concomitant Personality Problems Viewed as Communication Blockages. *Elwood Murray, University of Denver.*
9:55 a.m. Correlation of Speech and Personality Problems in Pre-School Children. *Amy Bishop Chapin, Western Reserve University.*
10:10 a.m. A Study of Personality Structure in Certain Persons with Defective Speech. *Ollie L. Backus, University of Michigan.*
10:30 a.m. Adjournment.

ORGANIC DISORDERS

10:30 a.m., Carlton Room, Carlton Hotel

Chairman: Claude E. Kantner, Ohio University

10:30 a.m. Prognostic Factors Relating to Language Rehabilitation in Aphasic Patients. *Jon Eisenson, Queens College.*

10:45 a.m. A Comprehensive Historical Survey of Concepts Regarding Congenital Language Disability. *Jack L. Bangs, University of Washington.*

11:00 a.m. A Comprehensive Evaluation of Fifty Cases of Cerebral Palsy. *William G. Wolfe, University of North Carolina.*

11:15 a.m. The Speech Program for the Cerebral Palsied in New Jersey. *Helen Fagan Bender, New Jersey Society for Crippled Children.*

11:30 a.m. Lingual Anomalies in Cleft Palate Cases. *Mildred F. Berry, Rockford College.*

11:45 a.m. Discussion.

12:00 n. Adjournment.

12:15 p.m. ASHA Luncheon and business meeting. (Hotel Statler.)

TOUR OF U. S. ARMY AURAL REHABILITATION CENTER

2:00 p.m. Buses leave front entrance of Statler Hotel.

2:45 p.m. Tour and demonstration begin.

The Aural Rehabilitation Center of Walter Reed General Hospital is located at the Forest Glen Section of the Hospital. The Forest Glen station, Maryland, is about 8 miles north of the Convention hotel.

The tour will be in the charge of Aram Glorig, M.D., Director of the Aural Rehabilitation Center. Dr. Glorig has kindly consented to permit the members of ASHA and other interested persons to visit his unique institution.

Transportation arrangements for the tour are under the direction of Professor Ray Ehrensberger, University of Maryland. Buses will leave the front entrance of the Statler Hotel at 2:00 p.m. and will arrive on the return trip between 5:00 and 5:15 p.m. The round trip fare is 75 cents.

Bus tickets must be purchased at the Information Desk, Statler Hotel, not later than noon, Wednesday, December 29.

PROGRAM COMMITTEE

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James F. Curtis, University of Iowa
William G. Hardy, Johns Hopkins University
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Lou Kennedy, Louisiana State University
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Kenneth S. Wood, University of Oregon
Spencer F. Brown, *Chairman,* University of Iowa

JOURNAL OF SPEECH AND HEARING DISORDERS, 1948, **13**, 294-305

A Physician's Account of His Own Aphasia

Robert H. Rose

Editor's Foreword

IN THE SPRING of 1947, Professor G. W. Stewart of the Department of Physics, University of Iowa, called to my attention a document which he had received from his friend, Robert H. Rose, M. D., of New York City. The document (see Item No. 8, below) was a letter describing the effects, particularly the language disturbances, of a 'stroke' which he had suffered. It was Professor Stewart's perceptive thought that Dr. Rose might be able to provide significant personal observations concerning his recent aphasic disturbances and his ingenius and persistent efforts to regain his language functions.

In September, 1943, Dr. Rose had been admitted to the Neurological Institute, New York City, where a diagnosis of 'thrombosis of the left middle cerebral artery' was made. At that time his age was 67 years, 8 months (birthdate, 1-24-1876). The resulting language difficulties and subsequent improvement are described by Dr. Rose in the documents presented below.

A minimum of selecting and editing has been done; Dr. Rose's own statements are presented just as he wrote them, with all errors preserved. Essential correspondence is included.

A validating statement was graciously prepared at the editor's request by Theodore B. Russell, M.D., who has been in contact with Dr. Rose since March, 1944.

I am deeply pleased to express to Dr. Rose the gratitude of all professional students of language disorders for his unselfish and scientific spirit in making his personal and intimate observations of his own difficulties available to the *Journal of Speech and Hearing Disorders*. Professor Stewart is deserving of special thanks for bringing the matter to the attention of the *Journal* editor, for obtaining for him a copy of the phonograph record made by Dr. Rose which is described below, and for cooperating generously throughout the study. Everyone concerned is also appreciative of Dr. Russell's indispensible assistance in supplying essential medical confirmation of Dr. Rose's account.

The letters and documents are presented in chronological order, except for certain modifications made in the interests of over-all integration of the material. —Wendell Johnson

1. *First letter to Dr. Rose, 4-14-47*

Dear Dr. Rose:

Professor G. W. Stewart of the University of Iowa Department of Physics has been kind enough to tell me something about you. I am writing you in my capacity as the editor of the *Journal of Speech Disorders*, which is the official publication of the American Speech Correction Association. I hope that what I have to propose will strike you not only as appropriate from a scientific point of view, but also as of personal interest to you.

I feel that you would be able to make a valuable contribution to the study of the difficulty with which you are now contending if you would write a personal account of the details of your experiences with aphasia.

I realize that you might prefer to take considerable time to do this if it is agreeable with you to do it at all, and I shall of course be happy to wait as long as necessary, because I am convinced that you will be able to write an article which would be of considerable value to speech pathologists. At your convenience, I would appreciate very much having your reaction to this proposal.

Yours very sincerely,
Wendell Johnson

2. *First letter from Dr. Rose, 4-27-47*

Dear Dr. Johnson:

When first I thought this over, I was rather timid about the offer. Dr. J. M. Nielsen, when I learned he wanted the original copies which I did in pencil, Rather puts a new light the work. (You see I could not spell original. I looked it up in Thorndike)

A former patient, Hon. Ralph W. Gwinn said my writing was the same. I wrote him it will be the same when, and, if I recover—the spelling.

I can trace this thing from the beginning, when I could not spell the names of my two books, nor think of their Titles.

I think I can see that what you want is there.

Yours very sincerely,
Dr. Robert H. Rose

3. *Letter from Dr. Rose, 6-21-47*

Dear Dr. Johnson:

After writing this over three times and correcting a lot of mistakes in spelling and otherwise, I am sending it on to you without typewriting, to make any further corrections you may see.

It is largely confined to in *Memorization* in Aphasia.[1] What it has done for me is beyond compare and *quickly*.

I wrote my sisters every week. Now I have all in my posistion. There interest is in the writing, mistakes and corrections from time to time—improvement every week. I will look these over to see what there is, now that I have written Memorization In Aphasia.

My mind is not clear, nor is my memory, what Ideas I have are a product of mulling over my thought and giving them time germinate.

Yours very sincerely,
Dr. Robert Hugh Rose

My boy said he would get me the mechinism for making a record of my voice. I think he saw an advertisement in some paper. It is substantially normal. It wouldn't show in Hamlet's Soliloquy. If he gets it soon, I will send it on to you.[2]

Dr. Robert Hugh Rose

This is typical now, because I seldom think of things when I want to say them. When I write a letter I often send another the next day, to make up for the messages I missed.

Dr. Robert Hugh Rose

I can't fold a paper.

Dr. RHR.

4. *Letter from Dr. Rose, 6-25-47*

Dear Dr. Johnson:

I am starting right away to supplliment my ideas with others. I think it would add to the text if I added, 'This Memorization serves as an aid in the Treatment of Aphasia.' (Last sentence.)

Page 2, following could not spell, for the stroke area in part was missing.

I received a letter from Dr. G. W. Stewart in which he explained why he wanted my letters in print. Having just finished the paper on Aphasia, I

[1]See Item No. 6. The statement presented under 6, as explained in Dr. Rose's letter of July 16, 1947 (Item No. 5), is a later revision of the document referred to here.

[2]The recording was made on September 23, 1947, and is discussed below under Item No. 11.

want to look that over before I do anything else. (I received Dr. G. W. Stewart's letter Monday.) I wrote him late Saturday and our letters crossed. I think I might get some ideas if I use my head—though they come slowly.

Sincerely,
Dr. Robert H Rose

5. *Letter from Dr. Rose, 7-16-47*

Dear Dr. Johnson:

I have found my speech immeasurely improved by memorization, frequently repeated. I have formed a habit of doing Thanatopsis three times daily to get the maximum effect. My speech took a forward spurt when I started Thanatopsis, Hamlet's Soliloquy. She Was a Phantom of Delight, Tell Me Not in Mournful Numbers and other Poetry. In fact it occurred quickly in 2 or 3 days, there-after.

Now I realize what I have accomplished by using the Radio and Movies so frequently. The first two years I was at the Radio almost constantly. Then I started memorization. This was without pain or discomfort.

I have learned to talk easily and quickly by the use of Poetry and so far as I know the use of Memorization in the Treatment of Aphasia has not been done. The thought came to me to try such treatment.

I was thinking about your saying the article on Aphasia would be more valuable just as it is, but I could add some emphasis as, headlines etc., etc. Perhaps to settle what I mean, the only thing I can do it to send another copy.[3]

Cordially,
Dr. Robert H Rose

6. *Statement written by Dr. Rose, 7-16-47*

MEMORIZATION IN APHASIA

On September 12th, 1943, I was seized with a Broca's Stroke. *Speechlessness lasted about three weeks.*[4]

I will try to relate some of my experiences and tell how by memorizing poetry I was enabled *to talk freely. Thus memorization served as an aid in Treatment of Aphasia.*

I was in more or less of a haze, when I went to the Medical Center. I was conscious could eat, went to the Xray, followed directions, as to position, etc. Made another visit in a week and recieved the report that all was improved. Toward the end of this time I went out on the verada on several occasions and listened to the radio. I understood every sentense, but could not say a single word. At the same time there was some improvement in my general condition.

I then transferred to the Lutheran Hospital where I had an endowed room at my disposal. I gradually acquired the ability to say a few words. One thing which I remember is that when a doctor tried me on the famous phraze *'Fifth Cavalry Brigade,' I said it several times.* I said it for a number of doctors who were at a board meeting. *But the next day I failed utterly to recall the phraze.* Later I thought of it, off and on, and it came and went alternately. The speech gradually improved as I was gaining through resolution. This was a mere part of aphasia.

In the middle of *November 1943,* I practiced my name and address, *since I could not spell,* for the stroke area in part was missing. I kept weekly records, *started them after 3 months.* When I refere to them, I see that I spelled Hospital this way, *'Hospeten,'* at first and other spelling on a par with this. I have many of

[3]This copy follows. An earlier copy, written by Dr. Rose June 21, 1947, is not included here. It resembles the July 16 copy very closely, but is not quite as detailed.

[4]All italics are Dr. Rose's.

my records in the form of letters which I sent every week to my sisters. In turn they kept them and when I wanted them later they sent them all to me. This is an *especially good statistical* record for the writing, as it shows the mistakes I made from time to time, and *the improvement, both weekly and yearly.* The study of these records will give much information.

When I left the Lutheran, I went to a Nurse Home in Brooklyn for two mounths. I realized that I *had to learn* the *Alphabet,* the *Days of the Week,* the *Months,* of the *Year,* and many other simple things all over again.

Aphasia

Showing how Aphasia haunts me with loss of memory. In January 1944, I thought about my two books, 'Eat Your Way to Health' and 'How to Stay Young' and *I had to ask my sister to tell me what their* names were. I had only a hazy remembrance.

I spent the Spring, Summer and Fall at the YMCA and then came to the Episcopal Home where I am continueing my re-education. It is like being born over again. I have done many things of value and profit, such as the following:—reading papers, learning to write, the use of Thorndike's word book of 20,000 of the most commonly used words, which I have gone over four times, used the radio for practice in speech, regular attendence on the movies and such talking as I could do without a deffinite plan. I am impelled to do something all the time.

Radio A God Send

In the early stages, except for the first 3 or 4 weeks, *I used the radio all day,* as it was the only means which I could use in my re-education. These four years show how slow that was. I listened to *all the stories,* and *news* and *music* and *thus kept my mind occupied. I could use the radio without pain* or discomfort. I used adds for script and spelling practice.

I had trouble spelling *such simple words* as *Tuesday and Wednesday* even after two years. I am still wrestling with the d's, g's, f's, n's, etc. The only thing I can find to do for these is to use Thorndike for spelling practice. I have been writing 'Ready for the Holidays,' 'Here's My Newest Picture' and 'These Things We Hold Dear' for practice and *I am just able to recall them.* I could not use more than 100 words a day, or it would cause pain. That is my experience. It impinges upon the stroke area.

Memory Gone

In late August, 1946, I went down to the chapel to try myself on the Ritual. I could go through all in concert, but when I came up stairs, *I failed to recall even a few lines*—of the *Lord's Prayer.* For some reason I could say, 'Now I lay me down to sleep, etc.' I resolved to re-learn the 'Lord's Prayer,' 'The 23 Psalm,' and 'Crossing the Bar' and build from that point, if possible. I realized that if I could not make progress with such tasks, I would indeed be up against a brick wall. *I used repetition* and could see some headway but it was very, very slow.[5] My records show that *by the end of November,* I *Knew these three pieces.* I spent an immence amount of time on them—mostly in repetition.

Now I wanted to continue memorizing such poems—hoping[6] to make the progress real and decisive. I thought of more Psalms, The Beatitudes and other poetry with which I was formerly familiar. I was trying for such as would be easy to memorize. Poe's Bells seemed good but I gave that up

[5]Dr. Rose originally wrote this as 'show.' He corrected the typed copy, making the word 'slow.' Other errors in this document that were detected and corrected on the typed copy are so indicated.

[6]Originally written 'hopping'; corrected on typed copy.

for an easier one. The most familiar seem best.

Thanatopsis in Aphasia

Toward the end of February, I found what I had been looking for in *Thanatopsis.* At one time I could almost say it in my sleep. I started to read Thanatopsis and it seemed very easy to me. I went over it a number of times and snatches came back to me and it seemed that I could far more easily re-learn it than the Bells.

The next day when I awoke, I was almost saying it. After breakfast when I lay down, I could say most of it entirely. *It was just a matter of a few days* to clinch it.

I was then resolved to take advantage of *Thanatopsis* and make my speech whole again. I resolved to do *Thanatopsis three times a day* and see what it would do for me. I was not disappointed. My speech took a great forward spurt. The progress was almost unbelievable. I was getting along slowly before, but thereafter I seemed to gain as much in one week as I had previously in three months.

Memorization Opens The Way

When I saw the result I was getting from my excursions in Thanatopsis I went down to show the Superintendent and Secretary how I could talk. The speechless one was talking freely. I could say the words in *Thanatopsis without hessitation*[7] in what might be called perfect speech. This was about 500 new words, quite enough vocabulary for ordinary talking.

There is a wonderful difference in my talking since I started Thanatopsis. I talk almost the same as I did before I was taken sick. Now I am becoming quite facile in speech. *The more I practice Thanatopsis, Hamlet's Soliloquy, She was a Phantom of Delight, Tell me not in Mournful Numbers;* the more quickly I gain. I learn the poetry which I formerly knew very quickly. And it adds to the variety of my vocabulary.

I did not have *Hamlet's Soliloquy* with me; it was among my books in Mount Vernon. *I thought about it for two days* and without a copy, *I remembered it entirely.* So I do that almost as often as I do Thanatopsis. It seems to me that I am getting these former quotations back in memory. While it was hard to learn the first words of the Lord's Prayer last Fall, now it seems easy. Easy also to *relearn that old* poetry *which I used to know.* It seems to be quite accumulative, more so all the time.

Gray's Elegy

Read often aloud and you will come close to memorizing, but not entirely, you are to become familiar only with new words. This is the treatment you should apply to Gray's Elegy in the Country Churchyard, along with similar poetry and prose, as (and)[8] such prose as Victor Hugo On Immortality. I am sure that you will profit immesely if you carry out these directions consciously. Read them over and over again.

Four Hours At The Movies

Yesterday I went to a movie and remained four hours. This I consider very important since *it did not tire me at all.* The use of my eyes and other faculties involved was entirely comfortable. But it was entirely another matter with the writing, for it hurt me, the *Thorndike word book hurt me,* when I used *it for more than 100 words,* and *most forms of writing hurt me.* In other words I can[9] spend time *using the radio* or at the *movies with entire comfort. But not so when I use* my writing area *as it impinges upon the stroke area.*

[7]On typed copy Dr. Rose put a question mark under 'hessitation.'

[8]Dr. Rose deleted 'and' from the typed copy.

[9]This word was changed by Dr. Rose on the typed copy from 'cen' to 'can.'

Memorization Ideal For Talking

Learning to talk by memorization has the advantage that it is free from pain and can be used to your hearts content. (Postmarked New York City, July 16, 1947)

7. *Letter from Dr. Rose, 7-1-47*

Dear Dr. Johnson:

Thank you for your letter, contents duely noted.

As for the P.S., it is harder for me to say what is the answer, but I shall try.[10] This case is almost 4 years old and I took it up and monopolized it entirely. I met Dr Amill on the elevator and recited Thanatopsis—thus showing him how a could talk. That is the extent to which any one else has taken part in the process, Dr. Amill just resigned, to be succeeded by Dr. F. A. Smith.., Dr. T. B. Russell has six months of the service in the Fall.

Dr. Louis Casamajor had me in charge the first 3 weeks. It was there that I had the two Xrays. I had a couple of letters from him in 1946. November 22nd 'I was interested in reading of your experience in the recovery of aphasia. The data you gave me is very interesting and I'm very glad to have it.'

Dr. Louis Casamajor, The Neurological Institute
168th Street and Ft. Washington Avenue
New York 32 N. Y.

I was about 2 months at Lutheran Hospital. Dr. J. Stanleiy Kenney, 924 West End avenue New York City, had me in charge there.

Then I went to a Nurses Home in Brooklyn. Where *Dr. H. F. McChesney* had me for two months. Now he has retired on account of a heart attack, but his address 60 Greenway North

Forest Hills Garden
New York

I don't think he answers any letters.

I am enclosing a letter which I wrote last Fall.[11] That gives quite a little history of the case.

I might find some of the M.D.'s away at this time. Otherwise I might go to the various offices[12] and show them how I can talk. That is a possibility.

Sincerely yours,
Dr. Robert H Rose

8. *Original statement, dated 10-5-46*[13]

At the request of Dr. Robert H. Rose this copy of a letter is being sent to you. The original was written by him to a Phi Kappa Psi brother, who in turn sent copies to more than twenty others. That gave Dr. Rose an idea: to send copies to some of his friends.

He has consistently maintained an amazing interest in devising procedures for teaching himself to speak, read, and write. From the first he has known what he wished to say; and has been able to read with his *ears*. Radio a godsend.

I have had in mind for a long time, when I reached the point at which I was reasonably able, to answer all the letters which you and your friends so thoughtfully sent. Since there are so many and since you have been one of the prime movers in carrying on this good work, I think it would be better to make a complete history of the case as I see it today. In this way I shall run less risk of making it my last case.

[10]The P.S. contained an inquiry as to Dr. Rose's physicians.

[11]This letter follows.

[12]Dr. Rose changed 'affices' to 'offices' on typed copy.

[13]This is the original document which Professor G. W. Stewart called to the editor's attention. It may be assumed that this statement was probably edited somewhat by a person other than Dr. Rose; the first two paragraphs were not written by him. Further changes were made by Dr. Rose later when a copy was returned to him for checking. These later corrections are noted.

I can't say that I was particularly uncomfortable at any time. I ate every meal as they came to me. I just did not know what was going on all the time. One of the first things[14] I recall is going to the X-ray to have my skull radiated. I took the chair. I did not have loss of power in muscles. I could get on the table without trouble. I had pictures of the cella tursica. I went back again in two weeks to see how they were doing.

You see I could not say a word. I had trouble making myself understood even for the simpler things. It seemed the attendants were dumb. Before I left Medical Center I can't remember whether I could say a few words. I don't know how long I was at Medical Center—I think about three weeks. I went out on the veranda and listened to the radio. I could hear perfectly. When I went to the Lutheran Hospital I got a radio in my room and listened to it from morning to night—the trash as well as the opera. I had to do something all the time. I could not stand it otherwise. I think my sister was very nervous when she could not understand that I wanted a knife to clean my finger nails. There was a chance that it might be useful for other purposes. Dr. Bauer thought of suicide. I surely did not have that in mind at any time. I only wanted to spruce up. This idea of not being able to communicate one's thoughts is not easy to stand. Dr. Bauer gave me electrical treatments while I was in Luthern Hospital. He was an old friend of mine. Unfortunately he died last Fall at the age of 82.

This is an easy place, the cella tursica, to get a view of the picture desired to show the arteries in that region. After I had some examinations and rest and treatments I moved to the Lutheran Hospital. As I remember I was at Presbyterian Hospital three weeks. (I shall give you this side-light on my condition. I had to look up 'Presbyterian' to see how to spell it. This is one of my greatest difficulties after three years. I can't spell anything without looking it up. Of course I am getting some things settled, but it is just as if I started life all over again. There are three points: spelling, figuring and talking.)

The next chapter is my stay at Lutheran Hospital until about Christmas. I can date events easily in this way. I began to get a few words and they increased quite rapidly, but the spelling was very slow. In fact it was just as if I were a newborn babe. I had a lesion in my brain, a stroke which blotted out my speech, my ability to figure, to write and to talk. I had to learn the alphabet, to spell, to figure (addition, subtraction, etc.)

I spent six weeks in a Nurse's Home. This reminds me that I had spilled my food on the right side at first. When I went to the Nurse's Home I had a table to myself. I was getting so I could take things pretty well. I took one or two-mile walks. I made a practice of taking two walks a day.

Then I found a nearby movie. From that time I went twice a week to movies except when something interfered. You see I can get everything on the radio—nothing is blocked out there. All things have gradually gotten better.

I was not lacking in muscular power. The fact that I was able to move about without limping kept me from attracting attention. The trouble was in my speech, writing and figuring. I could not add a column of figures. When I left the Nurse's Home I went to the YMCA. I could get along pretty well because I told everyone I lost my speech—I could not say a word for a time. I could select food pretty easily at the cafeteria. When I was at a loss for a word I pointed. I took the change they gave me, asking no questions. I was at YMCA from first of

[14]This word was written in by Dr. Rose in re-checking the manuscript.

March to November. Then I went to the Episcopal Home opposite the Cathedral of St. John the Divine, where I am for life, or until I get enough better so that I can finish my book which I started (This institution was started in) before I was taken sick.[15] It is all that can be desired in every way.

Now I am improving every week in all ways. I will give you some details of my record: I started a record once a week. It consisted of the alphabet, the small letters, the capitals, and digits, some figures, some suitable adds from the papers which I repeated just the same every week. This gave me practice in learning these things. Now the condition is the following: I can *talk* more from week to week. I get practice from reading, from the radio, from the movies. I get some practice talking at the table. I can *write* with difficulty. I can figure with the greatest difficulty. I have aphasia, that is loss of memory for letters, words, etc. I have loss of ability to *read*.

Some side-lights on the loss of memory are interesting. I went to a movie. I came back and tried to tell the people at my table what it was. I could remember La Traviata but I could not remember the other piece. All I could think of was 'The Merchant of Venice.' It was 'The Carnival of Venice.' The next day I went down to 104th Street to look at the sign. I thought I could remember then. When I got four blocks away all I could think of was 'The Merchant of Venice.' Then I tried some mnemonics. I started the a, b, c's and it came to me—'The Carnival of Venice.' That way I can get the clue.

I have been working on this letter two months. My eyes get tired when I work more than so much. That is the reason I could not answer your letters before. Three years is a long time, but I will make it sometime in the future. I could not undertake to use a pen. I have learned to sign my name. That is practice.

All my friends who have written me I wish to thank very much. I certainly appreciate the thoughtfulness of their messages.

(Signed) Dr. Robert H. Rose
October 5th, 1946

9. *Letter from Dr. Rose, 8-25-47*

Dear Dr. Johnson

Some of my mistakes in Spelling—phrase, (the same), hoping, hesitation. My speech took a great forward spurt.

When I was at the Y.M.C.A. 4 months after I was taken sick, I spent 9 months, a period in which I thought of what I was to do to regain my speech. Every week we had a sing. When I could talk very little, I could sing all the old songs almost perfectly. This gave me the idea of memorization eventually and I tried it and found that I soon learned to talk. I found my singing speech was clear, that I could say the words when singing them. That was the solution of[16] learning to talk. The conclusion is that the brain pathes for singing takes a course further from the stroke area and there-fore this also holds for memorization. This fact is recognized by M.D.'s The fact that Poetry, music and singing come in. It should be recognized that Poetry, music, singing, and[17] *memorization* come in—the singing—talking brain pathes are[18] nearer

[15]In the typed copy sent to Dr. Rose a line had inadvertently been left out at this point, so that it read, 'my book which I started in 1872.' Dr. Rose wrote in the missing words 'before I was taken sick.' However, he crossed out 'in 1872' and changed 'It' to 'The time.' The original read: ' . . . . my book which was started before I was taken sick. This institution was started in 1872. It is all that can be desired in any way.'

[16]Dr. Rose changed 'to' to 'of' on typed copy.

[17]Dr. Rose inserted 'and' on typed copy; he also underlined 'memorization.'

[18]On typed copy Dr. Rose changed 'is' to 'are.'

than the the talking talking, otherwise how could you say in singing what you could not say in plain speech. If this is not clear. think it over, it will come to you.[19] I am trying to work out a thought—bear with me.

My best wishes,
Dr. Robert H Rose

10. *Letter from Dr. Rose, 9-2-47*

Dear Dr. Johnson:

I feel that I should give you the news as to my condition—that is keep you up to date. Unfortunately your 500 page book, 'People in Quandaries' was almost my Nemesis. What I found was that my trouble centered in the writing and reading. When I tried to read the book, from the library, in two weeks,[20] I bit off more than I could chew. I certainly would have risked another stroke or some vascular accident if I had followed through. I did not realize that my trouble was confined so deffinitely in the reading and writing areas. Three mounths after I was taken sick, I read the paper every day and gradually increased the amount but evidently did not get the stress so much concentrated over the writing and reading areas. I shall try it again latter.[21] I see my limit is very deffinite. I find it very interesting[22] but it is too early for me. I could take it in a little time—but a long time from now.

I read considerable in Dr. J. M. Niclsen's book on Agnosia, Apraxia and[23] Aphasia. I could not understand why it was so difficult—now I know.

I think memorization might have a place along with your ideas about stuttering. I have read this part and like it very much.

Cordially and sincerelly
Dr. Robert H. Rose

11. *Notes on a phonograph recording made by Dr. Rose.*

The recording begins with the following introduction, spoken by a woman's voice:

'This recording of *Hamlet's Soliloquy* from memory, on the 23rd day of September, 1947, has been made by Dr. Robert Hugh Rose, who suffered a Broca stroke four years ago, and for some weeks lost all power of speech. Thereafter Dr. Rose gradually regained a limited use of the spoken word, but it was not until some months ago when he started on a self-imposed course of memorizing and constantly repeating poetry that he began to recapture greater facility of speech, and incidentally to enlarge his vocabulary. This recording was made as a partial demonstration of results from such a course to date.'

There follows a recital by Dr. Rose, in a well controlled and expressive voice, of the complete 'Soliloquy' from *Hamlet*. According to my count, Dr. Rose spoke 276 words at a rate of approximately 150 words per minute. He made only two errors (if they were errors—I do not know how he learned the passage), omitting 'the law's delay,' and substituting 'in' for 'with' in 'with this regard.' The performance as recorded was generally excellent, in my judgment. Professor G. W. Stewart made the recording available to me.—Wendell Johnson

12. *Letter from Dr. Rose, 10-28-47*

Dear Dr. Johnson:

I wish to make a change in my paper, 'Memorization In Aphasia.'

Gray's Elegy.

Since I have found that learning to talk is made far easier through the use of Memorization, I feel the need

[19] On typed copy Dr. Rose changed his original wording, 'it will bear elucidation,' to 'Think it over, it will come to you.'

[20] 'Week' changed to 'weeks' on typed copy.

[21] Dr. Rose apparently meant to change 'latter' to 'later;' but instead of crossing one of the t's he crossed out the a and wrote another a above it.

[22] n (interenting) changed to s on typed copy.

[23] The word 'and' was added by Dr. Rose on typed copy.

of enlarging my vocubulary. In addition to the selections mentioned, I find Gray's Elegy serves to supplement admirably and have used it in the following manner. Repetition will do you a world of good. Read over and over again. Thus you may become familiar with 1000 more words. Read twice daily, for ten days and repeat as often as you like. Now you can pursue this plan for other poems and make that your pattern. I am sure that you will profit immencely if you carry out this plan consciously.

Yours very sincerely,
Dr. Robert H. Rose

13. *Letter from Dr. Rose, 2-26-48*

Dear Dr. Johnson:

When Dr. Stewart was here at Christmas Season there seemed to be some doubt about who was to write the introduction to my paper on, 'Memorization In Aphasia.'

It came about as a result of the years which had elapsed in more than four years of my sickness and the changes following to war.

Recently I visited Dr. J. B. Russell, the Physician at the Home, 1060 Amsterdam Avenue, whom I have learned to know intimately and favorably, and who has all my history in his (. . . .) and all data of my case from the beginning. Copies of most of the records were sent from Presbyterian and Lutheran Hospital and are there for reference.

The past week I had several talks with Dr. Russell. He is enthusiatic about writing the introduction to my paper. He even regards the subject as having enough material for a book.

Dr. Russell has had me in charge since he came back from the Navy more than a year ago. Needless to say he likes the way I have improved, especially in in speech, doubtless through Memorization.

I am sorry that I did not do this before. But it is very laborious for me. It consumes quantities of time and effort and I thought that when I wrote the paper it was enough—especially for an Aphasiac who is not supposed to be able to do things.

Yours very sincerely,
Dr. Robert H Rose.

14. *Letter to Dr. Rose, 3-4-48*

Dear Dr. Rose:

On October 7, 1947, I sent copies of the enclosed to Dr. Louis Casamajor and to Dr. J. Stanley Kenney. I have had no reply from either of these men. After receiving your letter of February 26, I have decided to send the enclosed direct to you with the hope that you might deliver it personally to Dr. T. B. Russell. I am sending a carbon of this letter to Dr. Russell also, so that he will understand what I need.

The enclosed manuscript is made up of copies of the various letters and statements which you have written to me. I should like to publish these in the *Journal of Speech and Hearing Disorders* because of the value they would have to speech pathologists. In order to do this, I need to have from a responsible physician who knows your problem at first hand an introductory statement which will authenticate your own personal account. You will recognize this, of course, as standard procedure in scientific publication. From what you tell me about Dr. Russell, he should be in a position to write such a statement very satisfactorily. The main thing he should say is that the account as written by you is accurate in essential detail in his judgment as a medical man familiar with your problem. To this he may add, of course, anything that he might desire to say.

I realize that I am asking a great deal of you, but I feel that you will agree with me that this is the best way to proceed. I know that when this material is published you will have a deep satisfaction in the realization that you will have performed a valuable scientific and humanitarian serv-

ice. I am grateful for the opportunity to cooperate with you in this.

Yours very sincerely,
Wendell Johnson, Editor

15. *Letter from Dr. Rose, 3-15-48*
Dear Dr. Johnson:

I turned over the script on my paper to Dr. Russell. He says he will get it back in a week or ten days. In the meantime I have some points I want to make.

Here is a partial list of the Poems which I have committed.

Thanatopsis, Hamlit's Sol., The Psalm of Life, She Was a Phantom of Delight, Oft in the Stilly Night, Light (the night has a thousand eyes), The Rainy Day, The Beatitudes, Trees, and Crossing the Bar.

The ones I have near-memorized.

The Bridge. The Day Is Done, The Childrens Hour, The Village Blacksmith, Gray's Elegy, My Heart Leaps Up, Indian Serenade, Hymn to the Night, Break, Break, Break, The Raven, The Bells, The Man With The Hoe, Rabbi Ben Ezra, Shakespeare (by Arnold).

Near-memorization is very important in that it serves to enlarge the vocabulary. It takes a long time to memorize, but not very long to near-memorize. Hence many of the latter list contains longer poems. I have appended this list, which is enough to show the logic of the process as I concieve it.

I have memorized Thanatopsis (500 words), Hamlet's Sol., The Psalm of Life, Crossing the Bar and others. Then, in order to further increase my vocabulary, I have used Gray's Elegy and all of those in the list of near-memorization.

You can see what I am driving at in making this classifications, how readily they fit into each other. Gray's Elegy is about 1000 words and they would soon use up a lot of words. The illustration makes the point clear, I think.

I shall send you the introduction by Dr. Russell and my paper[24] when both are ready.

16. *Statement from Dr. Rose, 3-15-48*
I think I have improved this somewhat
Use your judgment

Near-Memorization

An added term which is useful. Since I have found that learning to talk is made far easier through the use of memorization, I feel the need of more vocabulary and other aids. Near-Memorization is the connecting link with Memorization. This is the term I have used and I find it very convenient. You dont go to the full length of committing to memory but do a partial job. It is quicker, covers more ground, gives you more vocabulary in a given space of time. You read over and over again until snatches are very familiar. You get some advantages of both methods—a two in one method.

Gray's Elegy, a little more than 1000 words, and familiar to many, is one of the best selections I recall. I have addopted this plan for near-memorization; read twice daily for ten days, and repeat two or three times, according to your individual familiarity with each poem. In this way you can enlarge your vocabulary to any extent you may wish. Next take some of Longfellows or one of your own selection.

I have also provided some poems, which are more difficult—among these are Poe's Raven, The Bells and Markham's The Man With The Hoe. Now with these selections you can carry your vocabulary as far as you desire.

Thus you have the privilege of—

1 - Memorizing some poetry, and

2 - Near-Memorizing others.

Now one more thing is called to your attention, that is, the possibility of learning by heart many of the selections you are working on. If you wish at any time, you may change, Near-

[24] See Item No. 16.

Memorized ones into fully Memorized ones. This was shown me when I found that many passages of Gray's Elegy were half committed by me almost before I knew it. Therefore it is a sort of progressive process.

17. *Letter from Dr. Rose, 3-16-48*

Dear Dr. Johnson:

I had no longer affixed my stamp to letter until I remembered the Poetry which I learned at about 18 years of age. I wanted to tell you about it as it is the best example I now recall of long forgotten lines. I have no book of Meredith and had to work it out time by line. That is one point I wished to make

The Poetry
You can live without Poetry, Music and Art.
You can live without Conscience, live without Heart
You can live without Friends, live without Books.
But civilized man can not live without Cooks.

You can easily see why I have learned to talk after 3 weeks of steechlessness and at first slow return of speech.

Cordially yours,
Dr. Robert H. Rose.

18. *Dr. Russell's Confirming statement, March, 1948.*

On March 13th, 1944, Dr. Robert Hugh Rose (the author of the preceding article) applied for admission to the home where I was one of the attending physicians. We had known from the hospital records of Neurological Institute (New York City) of his admission in September, 1943, for a three-weeks period of observation where a diagnosis of thrombosis of the left middle cerebral artery had been made. As this home takes only people who are healthy and able to take care of themselves it was with considerable hesitancy that his application was reviewed. At that time he told of his sudden loss of speech and of the fact that he had been in several institutions since then and at the time of admission was living alone at the YMCA.

His speech was extremely slow, and it was obvious that it was very difficult for him to express himself. He chose his words slowly and carefully but would often forget them and forget episodes he had mentioned. This obvious frustration in his expression was accompanied by some mild irritability and he would often stop and shake his head, irritated by the fact that he could not find the words he wished to express and which he knew.

He was not admitted definitely to the home for five months, after which time his general condition seemed better and his speech had improved.

In the intervening years his progress has been continuous but slow. He appeared at the infirmary only infrequently and early in his stay would usually bring up his requests in writing, which he labored over as a rule for a good many hours. He frequently used a long word list, which he would attempt to memorize and then write over and over again. His progress in this respect was painfully slow, but there was distinct improvement.

At one time there seemed to have been a very rapid decrease in his difficulty for a short period. This, as he describes in his article, was when he first started to read 'Thanatopsis.'

At the present time Dr. Rose is able to carry on a very intelligent conversation in as steady a flow as most men his age. He occasionally gropes for his words, but his progress has certainly been most remarkable. Although this might have occurred without his extreme effort, certainly his tremendous desire to overcome what seemed to be a hopeless situation, and his persistence and perseverence working alone with a self-taught method, have been a great inspiration to those who have been associated with him.

Theodore B. Russell, M.D.

A Magnetic Recorder on Wheels

William J. Temple*

OTHER USERS of the Brush BK-401 Soundmirror may be interested in a simple modification of this machine which has been welcomed by members of the staff of the Speech Clinic and the Department of Speech of Brooklyn College.

Working from a sketch supplied by the writer, Mr. J. C. Pederson of the college plant operation and maintenance staff has remounted the component parts of the Soundmirror in a desk-high cabinet on soft-tired casters, substituted a 12-inch 'wide-range' speaker for the smaller original speaker, and placed a metal shield around the largest of the three motors.

(A photograph of this machine appeared in the August, 1948, issue of *Audio Engineering*, page 21, and also in the *Scholastic Teacher*, September 22, 1948, page 14-T.)

The most important results are (1) greater convenience in moving the recorder from room to room, (2) improved frequency response, and (3) greatly reduced background noise, because of the added shielding and the greater physical separation of the motors, amplifiers, and speaker. The cabinet also has space for storing the microphone and its extension cable, along with the scissors and scotch tape for splicing.

Further reduction of hum can no doubt be achieved by the more refined methods described by Richard S. O'Brien of the Columbia Broadcasting system in the June, 1947, issue of *Audio Engineering*. We have not had the opportunity to try them out, as our rebuilt machine has been in constant demand, and its present hum-level has given rise to no complaints.

*William J. Temple (Ph.D., Iowa) is Associate Professor of Speech, Brooklyn College.

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Personality Measurement in Speech Correction

Sara Stinchfield Hawk*

IN THE MODERN speech clinic we are accustomed to make extensive use of case histories, personal data sheets, questionnaires and other pertinent material which we feel that we need in order to understand the needs of our speech patients or pupils. The data accumulated in various places varies from a simple record of a few pages briefly outlined, to voluminous records accumulated over a considerable period of time. Yet it is true that most of us are expected to accomplish results within a relatively short period of time and cannot wait until we have completed our gathering of information before corrective work may be properly undertaken. Each school or institution has its own preferred method of securing data and of keeping records. Sometimes such records accumulate, and not much use is made of them, we fear.

One can hardly make a study of the mental and physical development of any child without making some discoveries as to the total personality, yet our records usually do not give us much information on this phase of the child's development. In addition to our knowledge of the child's physical and mental status, we wish also to know how he behaves. Many workers in speech pathology, as in psychology, are making use of certain personality tests and measurements in order to have some objective record as to the child's or adult's overt behavior. Personality is not merely heredity *times* environment but is the way in which the life history of the individual becomes organized. Such organization determines whether hereditary gifts shall be used or not used and shows how a person responds to his environment. What the individual actually does in given situations is what determines the personality picture.

Various paper-and-pencil tests are often used in schools and clinics to aid the busy teachers in forming judgments as to the conditions and needs of various 'problem' children, of superior pupils, or of slow-motioned, retarded ones, so that she may help them in the school situation.

Such tests as the Haggerty-Wickman-Olson Behavior Rating Scales are often used in the school and in the speech clinic by teacher and psychologist, jointly, to form an estimate of the child's personality. One or more teachers rate the child, and norms have been standardized for the interpretation of the scores. Another test, on which the *child* does the scoring, is the Pintner-Loftus-Forlano-Alster Personality Rating Scale. There is usually considerable agreement between the teacher's estimate and the child's own scoring of important items.

The Bell Adjustment Schedule for children and the Bernreuter for older pupils are often used. The scoring of the Bernreuter is rather tedious, but the Bell Schedule is rather easily marked. The Maslow Social Adjustment Scale for college age is useful in

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locating disturbing factors. All of these may serve as screening devices which help to select children in need of referral for psychiatric help or advice, or counsel, guidance, psychological study, etc.

For more intensive study, the projective techniques are employed. These indicate what the personality organization really is and give more detailed information and insight into the child's or adult's basic difficulties and the factors which are back of them than do almost any other type of examination.

Speech difficulties often modify behavior and cause the individual to adopt, early in life, unusual ways of reacting. He may avoid people on the street, stay away from public functions, and become solitary and unsocial because he cannot talk normally. Failing to achieve certain goals, he becomes satisfied with less desirable outlets for his ambition, and his real abilities may remain hidden or undiscovered until he is too old to develop them properly. Even perfectly normal children act in unusual ways at times. We may expect the speech-handicapped child to react even more strangely. Most of our speech cases exhibit some peculiarities or behavior problems, else they would not have been referred. In order to secure the necessary information in as brief a time as possible, not only do we use the paper-and-pencil tests and questionnaires, but for more difficult cases the projective techniques are often employed.

The advantage of tests such as the Rorschach or the Thematic Apperception Test is that they offer a more certain way of finding out about the characteristic pattern reactions of the individual, while he is unaware of the extent to which he is revealing his true self. In most cases, he cooperates better than in the questionnaire situation or the pencil-and-paper tests. One of the early attempts in this direction was the word association method of Kent and Rosanoff. Later Jung's word association lists came into use. More recently Rapaport has published a list of sixty words first used experimentally by Orbison, the list representing a wide variety of ideation and pointing to the sources of a large number of different types of conflicts.

In the attempt to secure greater objectivity, testing by means of psychological instruments such as the psychogalvanometer were undertaken early in this century. The lie detector, with its claims for registering emotional changes, taking place as a result of suggestion and exposure to key words or to visual or auditory stimuli, has come into rather wide use.

More recently the presentation of norms and techniques for the use of the Rorschach Test of Personality has brought this clinical instrument into wide use. This is one of the most important contributions to batteries of tests to be used in any comprehensive study or analysis of the individual. The perceptual and associative processes brought into play through the use of apparently 'unstructured' (meaningless) material sets up a reaction tendency in the subject which enables the examiner to secure much more important data as to the individual's emotional attitudes, maturity, beliefs and prejudices than are possible through any direct questioning or through responses to pencil-and-paper personality tests. Through the administration and interpretation of the ink-blot tests, the examiner finds a fundamental perceptual organization going on in the mind of the patient, as he attempts to render 'structural' or meaningful, each of the pictures or segments of pictures as he perceives them, in relation to his own experiences or own concepts regarding basic factors in his own life. In the hands of the experienced interpreter, therefore, this test yields extremely vital and

significant material which could not be drawn from the ordinary replies of any individual through the usual verbal channels.

The originator and author of these tests, H. Rorschach, has fully described them in his book (**10**). They were first used in Europe. The general use and application of these tests by psychologists and other clinical workers has been developed through the work of the Rorschach Institute in New York, not only through the work of Klopfer and Kelly (**4**), but through the continual stream of information released by means of the publication of a research journal. The *Rorschach Research Exchange* and the recently added *Journal of Projective Techniques* have helped greatly in scoring and interpreting these tests (**11**). Other elements have been stressed by Beck (**7**) and by Rapaport (**8**). The Rorschach Test has been advanced rapidly during World War II through its use in government hospitals, in civilian psychological and psychiatric clinics, and in therapeutic work.

Klopfer and Tallman (**5**) have found significant organic signs in Rorschach responses in cases where gross organic damages to the nervous system were present. In giving the Rorschach, following lobotomies, they found crude color responses and other signs indicating the patient's confusion in relation to his environment, as well as signs of emotional instability and mental deterioration. Poor concentration and hazy thinking were represented in the slow reaction time and small number of responses. They found much perseveration and repetition, as well as evidence of great anxiety and dread of catastrophic shock.

The writer found similar types of responses in an aphasic patient following surgery. A woman of 40 years had suffered some loss of motion in the right arm and leg and some brain damage, so that her speech was much impaired. She was referred to the speech clinic, while receiving routine treatment for her partial paralysis. She learned to use the left hand and arm quite skilfully, even re-educating herself in the process of writing with the left hand, in a fairly legible fashion. As she improved generally, her speech began to return, and it was felt that training would aid in its more rapid recovery. Her responses to the Rorschach were only nineteen in number. She was slow in her reaction time and emotionally disturbed by the color and shading in the cards. She disliked the entire series of colored cards. Although she was by nature artistic and greatly enjoyed looking at ordinary pictures, she reacted rather violently to cards in which color played an important part.

She reacted more favorably to the Thematic Apperception Cards containing structured (meaningful) material and to word association tests, although she required a much longer time for her responses than is usually the case. She was excellent on visual perception but limited in auditory associations and was suffering from audito-motor aphasia. Re-arousal of old associations came about mostly through the use of visual and kinaesthetic stimulation and perception during her speech reeducation. We used the moto-kinaesthetic method with her very successfully.

In studies of stutterers the writer has found out much more about home situations, attitudes and needs of the patient through the Rorschach Test than through any other medium of examination. In one instance the test was given to a refugee lad who, in adolescence, had been plunged into a new environment and who had encountered for the third time a new language situation. He was not only confused as to language but was further involved in difficulties due to the home situation where he was outshown by a brilliant older sister

and much dominated by over-anxious parents and by other relatives living in the home. This resulted in a state of dread, anxious nervous tension and over-effort, with consequent personality difficulty accompanied by a severe stuttering condition. Not until the home situation was improved, his confidence in himself restored, and good outlets found for his enthusiasms and energies, did the speech impediment begin to disappear. His stuttering was complicated by a mild lisp and foreign accent, necessitating active training and correction of minor faults in diction and enunciation. Mere analysis was not enough.

In another case, that of a juvenile behavior case, the Rorschach failed to reveal any connection with a stealing episode in which the patient had been suspected. It was later found that this patient had nothing whatever to do with the stealing incident, even though he had been in the vicinity at the time when the episode occurred. The Rorschach actually helped in establishing this boy's innocence and in leading the authorities to locate the guilty person elsewhere.

In another instance a young man who was in training for Commando service during the recent war began to stutter severely, and it was discovered that he had stuttered in childhood for some months during a fearful episode in his life, and the engaging in tactics of which he strongly disapproved, coupled with a slight physical disability which was accentuated by war training, had apparently caused a recurrence of his speech impediment. Through the efforts of the speech worker and the psychiatrist, this young man was finally released from service, placed in a civilian job in defense work, and was able to make an important contribution to the war effort, as well as to completely recover from his stuttering.

Another young man who had lisped during his entire life was not conscious of his speech impediment until he entered military service. When he became subject to ridicule by his bunk-mates, he suffered a neurosis, was hospitalized, and when the opportunity to do corrective speech work appeared, he eagerly participated in his lessons. In his case a Rorschach helped in establishing rapport between the psychologist and the soldier, as well as between speech worker and pupil, and he made rapid progress up to the time of his transferral and re-entry into active military service.

Another instance is that of a young officer, returning from World War II, who complained of his inability to concentrate, his dissatisfaction with his courses in college and his generally poor adjustment to civilian life as a student. He had previously been a gifted musician, but on returning from the war he had felt that engineering was more of a man's job, and that to continue with his musical career would be a sign of 'weakness.' Upon being encouraged to change his major field and to enter gradually once more into the work which he liked and actually craved, his grades at once improved, as well as his personal happiness and satisfaction with his college work.

Another type of Personality Test employing the projective technique is H. Murray's Thematic Apperception Test (**7**). It consists of three series of pictures, representing vaguely structured material. One set is designed for girls or women, another for men and boys, and a third set which may be used with either men or women, girls or boys. These pictures tend to draw out the individual's past experience, as he identifies himself in some way with the picture situation. The pictures are suggestive of aggression, danger and fear, sexuality, depression or suicidal tendencies and parent-child relationships. The subject is required to make up a

story founded on the picture. This test limits the patient's responses less than do either the Rorschach or the Word Association Tests, and is more like a free-association test than are either of the former. The responses reveal certain environment 'presses' and urgent needs of the individual, his attitude toward surrounding personalities, some of his unconscious aggressions, desires, fear and anxieties, as well as giving insight into other material in the mind of the subject which cannot be elicited by direct questioning.

The use of this test by the writer in the case of an adolescent child who was maladjusted at home, always quarreling with another sibling, and making a poor adjustment in school, revealed the fact that the child was suffering from suppressed anxiety and uncertainty connected with the suicide of her father. The family had assumed that she was unaware of the fact of suicide and supposed that her father had died a natural death, whereas she had been harboring resentment against her mother for many months for keeping the truth from her, as she had learned the facts from playmates. Readjustment in home, school, and on the playground necessitated a complete change of environment for this girl, due to the proportions which her antagonism to her mother had assumed, before the facts were made known.

The writer has used the Word Association Test (**2**), (**7**, 13), to try to locate the culprit in various school escapades and other forms of misbehavior. It helps sometimes to establish the innocence, rather than the guilt of the suspected child. In one instance it helped to determine the leader of a gang of three boys who were stealing all possible bits of scrap iron and metal which they could locate or pry loose from the school building or grounds. The recurrence of significant words in their responses led to the discovery that this gang had a "hide-out," under one of the city bridges, and that they were selling scrap metal to junk-dealers, to obtain money for candy and similar items. The leader was actually a boy of subnormal intelligence whose association test very quickly revealed his connection with the misdemeanors in question.

Another type of personality measurement is a card-sorting test, called the Minnesota Multi-Phasic Personality Test. The manner in which the cards are sorted makes it possible for the examiner to secure much information regarding individual trends, attitudes, habits and behavior characteristics by using tentative norms established by the authors of the test in psychiatric hospital work. The original tests were first used on hospitalized mental patients and then compared with r e s u l t s obtained through their use with normal persons. They are based, therefore, upon a thorough-going study of clinical cases and normals in Minnesota, in connection with the treatment of nervous and mental diseases. With the normals they indicate certain basic components or trends in personality which may aid in solving individual problems and in securing mental catharsis through their appropriate use.

These techniques are bound to come into use more and more in any complete studies of the exceptional child of whatever type. We can scarcely get along without the increased knowledge which comes to us from the application of such tests. They may also help in the earlier detection of maladjustment, warped personality or psychoneurotic states in any patient referred for help to the speech clinic, as well as in other departments of hospital, school or clinic.

The use of such tests and successful application of these methods require intensive and special training. It would be out of place in this article to

describe the significance of such tests. It is sufficent for our purpose that the reader bears them in mind as a recent important diagnostic contribution to our study of any handicapped child or adult whose personality structure is such that he cannot live happily and usefully as a member of his community. It is part of our function as speech pathologists to aid not only in speech rehabilitation but also in helping the individual to better understand himself and the world in which he must live and function. The more he understands about the complex environment about him, the better fitted he is, not only to survive, but to make a satisfactory adjustment and to find that place in society in which he can best function. In so doing he may acquire the ability to avoid pitfalls and to develop forgotten talents, revivify his existence, and become an asset rather than a liability to his family and the community.

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Note: A more extensive treatment of this subject will appear in a forthcoming volume by the writer, in a chapter under the title 'Personality Measurements.' The exact title of the volume has not yet been determined, but the material is being published through the Stanford University Press on the general subject of speech re-education for the crippled child.

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Group Therapy for Adult Stutterers

Lucile Cypreansen*

THE University of Nebraska Speech and Hearing Laboratories have been conducting, during the past year, an experiment with a group of 14 university students who are stutterers. Previous to this time the work with stutterers had been done through individual therapy. Believing that adult stutterers would respond to group therapy, profit from the social experience, and provide mutual stimulation for each other, a flexible procedure of group retraining was planned. The experiment was carried on under the direction of the supervisor of the speech and hearing laboratories and with the help of a graduate clinician.

Some of the stuttering students were contacted by means of the Junior Division speech and hearing testing program which checks every new and transfer student, and others were individuals who came to the speech laboratories of their own accord. The 14 stutterers selected for the experiment were young men above average in intelligence who were studying in various departments of the University. Their placement in college ranged from the freshman year to the senior year, and their ages varied from 18 to 23 years.

Patterns of stuttering differed. Included in the group were several individuals who had the usual repetitions of consonants, repetitions of syllables and words, and blockings in speech. One student repeated and elongated vowel sounds; two students exhibited severe facial contortions while speaking; two other students scarcely stuttered at all, but labeled themselves as stutterers. These two latter boys were under the illusion that they were severe stutterers and appeared to suffer as acutely as any of the worst stutterers in the group. They used word substitutions and were tortured by the usual fears and agonies of adult stutterers. One young man, a freshman, was a beginning student in speech pathology and psychology. He plans eventually to do graduate work in these fields.

All of the stutterers stated that they used word substitutions and that they dreaded and disliked most speaking situations and were annoyed by their ineffective speech methods.

I

The group met for an hour and a half each week. The plan of procedure was as follows:

1st Meeting: The aim of this first meeting was to make the students feel at home in the speech laboratories, to develop a friendly relationship between the subjects, the assistant clinician, and the supervisor, to explain the purpose and plan of procedure for the group, to discuss the nature of their problems, and to encourage the development of an objective attitude.

2nd Meeting: The second meeting was devoted to recording individual case histories; in addition, each student was asked to write and bring to the next meeting an autobiography, bringing to light any incidents which might, in his judgment, seem to be related to his speech problem.

3rd Meeting: The individual case histories were discussed freely among the members of the group. The auto-

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biographies were reviewed by each individual, and several students brought out significant points in relation to their life stories and their speech problems. The case histories and the autobiographies were filed in the students' personal folders; these folders were kept in the clinic files. The students were given to understand that no one except the supervisor would see these file folders. No one was required to file his autobiography if he did not wish to do so. In all cases they were filed.

4th Meeting: Personality testing was undertaken. The California Test of Personality, Adult Form A was used. Everyone answered the questionnaire, including the supervisor of the work and the assistant clinician.

5th Meeting: The personality tests were analyzed. Previous to this meeting the tests were scored by the supervisor and an individual interpretation of each test was written. The first tests to be discussed were those of the supervisor and the assistant clinician. These were discussed freely and honestly. Terminology was explained, various items were discussed and comments were made. Discussion followed as to possible reasons for responses made to the various items. The group was encouraged to speak as freely as they wished in relation to their own test results. Each student came to the laboratory after this meeting for a private conference with the supervisor and for further analysis and interpretation of the test results.

An assignment was given to each student in relation to reference reading. The reference reading assigned included recent articles written on stuttering by specialists in the field and the reading of assigned chapters in textbooks written by well-known authorities. The group was told that the oral reports on the reference reading were to be done in the manner of telling your best friend of an interesting article you had read. No special effort was to be made to speak fluently; no one was to try to avoid stuttering. In fact, everyone was to take the attitude of, 'Well, I may stumble, stutter and block on this, so what? Everyone here is in the same boat, and at the present time we are going to try to care less that we stutter. We are going to try to stop fighting stuttering. We are going to stutter and accept for the present this pattern of speech.'

6th Meeting: Reports were made on the reference readings; open discussions followed. A sincere attempt was made to carry out the recommendations as suggested at the 5th meeting. By this time speech was becoming more free and easy. Members of the group were making less of an attempt to avoid stuttering.

7th Meeting: The oral reports on the reference reading were continued. The opinons of the various authorities in the field were discussed. Personal experiences were introduced, and often a theory found in the reading was related to individual experiences.

8th Meeting: An auditory analysis was made of each student's stuttering pattern. Interest was shown in the varied types of stuttering displayed; stuttering on consonants, on vowels, on phrases, blocks, facial contortions and other symptoms were noted.

9th Meeting: Individual plans were made for constructive changes in the daily habits of each student. This was in most instances a matter of planning simple changes which it was believed might help each student to adjust more adequately to his environment. In some instances it was a matter of planning a procedure or project which might in an indirect way help the student to develop more normal speech habits.

One student was to try to eliminate loud, boisterous speech habits; such behavior was being used, it was suggested, as a compensation for the stuttering that existed. This student was to practice speaking in a quiet, subdued voice. When he forgot, the others were

to remind him by saying, 'John, we can hear you.' It seemed to work well.

Another student who dreaded going to restaurants and into stores had formed the habit of always buying, whenever possible, at the same store. It was suggested that he should go to a different restaurant for each meal, and when he had gone the rounds, he should start from the first again. He also was advised to go to a different store for each purchase.

Another boy hated to speak to anyone, stranger or friend. He would nod and pass on whenever possible. He was told to go out of his way to speak to everyone he possibly could, strangers and friends, to speak in meetings, to stutter if necessary, but to have something to say and to try not to care how he said it.

All the students were told to talk, to express their opinions, to recite in classes regardless of whether or not they stuttered.

A great deal of mental hygiene was being used throughout the experiment. Each student declared that he did not care if the other fellow stuttered or not; each was concerned mostly with his own unrhythmical speech. The supervisor attempted to make clear the idea that everyone repeated at times and that no one was as concerned with the fact that a man stuttered as was the stutterer himself, that the greatest handicap was not the fact that one stuttered, but that one lived in fear and dread of stuttering. It was agreed that the attitude of the stutterer toward himself had to be changed. It was decided that fear grew greater as silence was indulged in, and that fear grew less as one permitted himself to speak without any effort to avoid stuttering.

10th Meeting: Various remedial techniques discovered in the reference readings were tried, such as: speaking before a mirror, voluntary stuttering, controlled speech patterns, work on the wire recorder, speaking while attempting to relax, and breath control exercises. The subjects were asked to continue practicing the various techniques at home for a period of time and to report on progress and influence, if any, on their speech patterns. They were asked to continue the practices which seemed to be helpful and to discontinue after a fair trial whatever was annoying and disturbing.

11th Meeting: Each student tried the 'two-room' technique, speaking extemporaneously and reading aloud while shut off in a room by himself. In a connecting room, closed off by a door, the supervisor made electrical transcriptions of what was being said. The microphone of the recorder was placed in the room with the speaker. Interesting results were noted. The speaker knew the recording was going on, but he did not know just when his speech was being recorded. Speech patterns on the records showed much improvement over speech patterns used in daily speech. The subjects were pleased and encouraged by the results of the recordings.

12th Meeting: A type of 'psychodrama' was tried. The students were given a hypothetical incident to dramatize informally without previous practice. A situation was set up such as: 'You are two men driving across an intersection in your respective cars in the Chicago loop area. You collide; your cars are damaged. You are angry. You get out of your cars and proceed to blame each other for the accident.'

Two students were placed in the room with the microphone. They proceeded to carry on the dramatization of the incident. There was very little stuttering noticed in this type of dramatization. The supervisor and the rest of the group in the other room could hear over the connecting amplification system all that was said. Parts of the dramatizations were recorded. Later the recordings were played back to the group. The subjects were free and easy in this project and appeared to enjoy

the performances thoroughly. Apparently, the students were making no attempt to avoid the stuttering patterns.

An assignment was made for the next meeting. Each student was to bring a three- or four-minute selection that he would like to read to someone else.

13th Meeting: The selections assigned for oral reading were practiced on the wire recorder. Two students worked together on one recorder, recording and listening, and offering suggestions to each other. Again, the students were asked to make no effort to avoid the stuttering.

14th Meeting: Electrical transcriptions were made of readings of the material which had been previously assigned and practiced on the wire recorder. The members of the group were allowed to take their records home to play for their families and friends. They were then returned and filed in the individual clinic folders.

15th Meeting: A meeting with the University consulting psychiatrist was planned. By this time, most of the members of the group appeared to have gained greater confidence in speaking situations. Attitudes toward stuttering had been changed, in many instances, and several of the students appeared to show definite improvement in speaking habits. The group was very much interested in the open discussion with the psychiatrist and in getting his suggestions.

II

The group meetings ceased with the end of the spring term. Each student was given suggestions for carrying out a constructive program for himself during the summer months.

Two of the boys wanted to make money at house painting during the summer. Their first job was for the Chairman of the Department of Speech. While engaged in the painting of the house the boys became involved in a good-natured argument which was overheard by the Chairman of the Department. The question under discussion was concerned with determining which one of the boys was the more maladjusted!

At the opening of the fall term each returning student was again checked for speech proficiency, and it was decided that the group work should be continued. Additional projects considered were conferences with prominent business and professional men who have professed to have been former stutterers, further discussions with the University consulting psychiatrist, conferences and discussions with faculty psychologists, participation in University speech activities, such as debate, radio, and the theatre, and the taking of mental examinations and aptitude tests. The making of recordings was to be continued.

The group therapy experiment for adult stutterers which began with ten members in March, 1947, had added four new members and had lost two of the original members of the group. Recently a second group has been started for five University girls who stutter. When the men's group heard about the work of the girls, they decided to combine the two groups for a monthly social meeting.

III

Along with the explanation of the plan of procedure used, it may be worthwhile to present certain evaluative information. A study of the results of the first California Test of Personality administered at the beginning of the retraining program indicates that the median of the group as a whole fell below the norm in each part of the test with the exception of one trait, that of 'Sense of Personal Freedom.' The difference of the median from the norm was greatest, negatively, in 'Self Reliance,' 'Freedom from Nervous Symptoms,' 'Social Skills,' 'School or Occupational Relationships,' and 'Community Relationships.'

TABLE 1. Summary of group data, California Test of Personality, Adult Form A: results of first test administered.

Test	*Median*	*Norm*	*Difference ±*
Self-Adjustment	24.5	50	—25.5
Self-Reliance	9.5	50	—40.5
Sense of Personal Worth	38.6	50	—11.4
Sense of Personal Freedom	53.75	50	+ 3.75
Feeling of Belongingness	38.6	50	—11.4
Withdrawing Tendencies*	29.5	50	—20.5
Nervous Symptoms*	15.75	50	—34.25
Social Adjustment	29.5	50	—20.5
Social Standards	36.0	50	—14.0
Social Skills	14.5	50	—35.5
Anti-Social Tendencies*	42.8	50	— 7.5
Family Relations	44.5	50	— 5.5
School or Occupational Relations	18.66	50	—31.4
Community Relations	18.66	50	—31.4
Total Adjustments	29.5	50	—20.5

*Freedom from.

A summary of the group data as gathered from the California Test of Personality, Adult Form A, is shown in Table 1.

It must be remembered that the data in Table 1 are a summary of the group data and in no way specifically indicate traits of any one individual in the group. The value of the summary and its possible indications may be questioned. However, some interesting questions arise in relation to the group results, and although no definite conclusions can be drawn, certain factors may suggest that further study and investigation may be worthwhile.

It may be that the higher median in 'Personal Freedom' could be related to the fact that these young men are in most instances more or less on their own at the present time, away from dependence and reliance on the family. It is possible that the summary of the group data may indicate maladjustments which may in many cases be found to exist when individual adult stutterers are studied in relation to 'personality adjustment.'

Interesting in this instance are the 'before' and 'after' scores of several members of the group. Form A of the California Test of Personality was administered in March, 1947, and Form B of the same test was given in December, 1947. Contrasting scores of three members of the group are shown in Table 2. Brief comments on the results are offered for whatever they may be worth in relation to the problem of understanding the individuals concerned.

The scores of Case No. 1 and Case No. II were similar in trend to the greater majority of the group as far as difference in total adjustment was concerned. The scores indicated that according to these test results the change in 'personality adjustment' had been for the better. The validity of these conclusions obviously depends upon the intellectual honesty of the subjects.

The results indicated in the report on Case No. III suggest several questions, mainly one: Is this a 'valid' report? In an attempt to throw light upon this question, Case No. III must be studied further from every possible angle. It happens that two members of the group had 'before' and 'after' scores of this nature, indicating very fine 'personality adjustment' in both March and December. However, it is the personal opinion of the supervisor

TABLE 2. Contrasting the March and December scores of three members of the group, California Test of Personality, Adult Forms A and B.*

Test	*Case No. I*		*Case No. II*		*Case No. III*	
	Mar.	*Dec.*	*Mar.*	*Dec.*	*Mar.*	*Dec.*
Self-Adjustment	30	85	10	65	90	99
Self-Reliance	10	85	5	85	75	99
Sense of Personal Worth	20	75	20	85	85	95
Sense of Personal Freedom	75	50	25	50	50	90
Feeling of Belongingness	55	55	10	55	95	75
Withdrawing Tendencies**	20	35	15	25	85	99
Nervous Symptoms**	55	70	5	40	70	70
Social Adjustment	30	95	25	90	95	90
Social Standards	5	65	35	90	85	90
Social Skills	10	95	5	90	90	90
Anti-Social Tendencies**	20	80	35	90	90	65
Family Relations	85	85	55	55	95	95
School or Occupational Relations	15	99	10	65	99	99
Community Relations	90	95	75	90	99	99
Total Adjustments	30	90	15	80	95	99

* Norm 50; first test Form A March, 1947; second test Form B December, 1947.
** Freedom from.

of the experiment that these two individuals are possibly the most 'maladjusted' individuals in the group. This is, of course, an entirely personal and subjective evaluation, but it raises the question as to whether or not these two boys really 'know themselves.'

The supervisor is confident that the tests were taken by all of the members of the group in a spirit of cooperation. The students probably answered the test items as honestly as they could. It is possible that some of the group may be 'fooling themselves.' Further study and help from the consulting psychiatrist and from the University psychologists should aid in discovering the answers to some of these questions.

IV

Perhaps it would be pertinent to quote some of the recent comments of the group members. When the question was asked as to whether or not the students felt that there had been any change in the overall severity of their stuttering patterns, some of the replies were as follows:

'My stuttering is not as severe.'

'My speech is not quite as bad.'

'I think my speech is better; at times, it seems to be much better.'

'My stuttering has lessened.'

'I notice no change in the severity of the stuttering pattern, but I am not as concerned about the repetitions I make as I used to be.'

There has been a change in the amount of speaking done and in the variety of speaking situations attempted. Several of the students have enrolled for beginning speech courses in which they are required to make short speeches before a class two or three times a week. It is possible that the informal discussions which take place during the meetings have had therapeutic value in developing greater ease in conversation. The students report greater ease in conversations and increased attempts in taking part in conversations that occur outside of the laboratory period. One student stated, 'I speak more, and I talk to girls more freely than I ever have before.'

That better adjustments have been made is reflected in a number of specific incidents. One student spoke informally on stuttering before a group of teachers. Increased dating and a

larger variety of social participation is reported by almost every member of the group. Increased participation in classroom discussions is also reported.

In one instance, participation in the experiment was the determining factor in causing one student to decide to major in speech correction and speech pathology and to plan for future graduate study in these fields. This young man received an intelligent quotient of 152 on a Stanford-Binet Scale. He shows promise of succeeding in the profession he has chosen to follow.

One of the students who dropped out of the group did so because he was inspired by one of his reports on the reference readings to enroll at another university in order to seek additional help from the specialist who wrote the article upon which he reported. He is continuing his therapeutic work in the other institution under the direction of this specialist.

The second student who left the group did so to take a full-time position. It has been reported that he is satisfied with his work and is finding fairly successful adjustment in speaking situations.

From the personal observations of the supervisor of the experiment and of the graduate student assisting in the program, it may be stated that speech during the group meetings was noticeably improved. Friendships have been made within the group, and no strain or anxiety seems apparent as far as speech during the meetings is concerned. Some repetitions and some blockings are noticed, but they appear to be done 'unconsciously' and without embarrassment. The facial contortions of two students have disappeared almost entirely.

Perhaps there is nothing new in this so-called 'method' of working with stutterers. However, it seems to be a sensible course and appears to be getting results. As one student worded it, 'It seems to be a method of desensitization. I no longer care if I stutter.' When asked what he meant by the last part of this remark, he added, 'I'm just getting more used to my stuttering and am accepting it. If I repeat, I don't worry about it so much. I guess I just care less.'

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Infant Speech: The Effect of Family Occupational Status and of Age on Sound Frequency

Orvis C. Irwin*

IN A RECENT ARTICLE (**1**) an analysis of the influence of occupational status and of age on the use by the infant of speech sound types was made. The development of speech of infants reared in families the fathers of which were laboring men was compared with that of infants in families of professional, business and clerical people. It was found that age is a significant component in speech type mastery and that the factor of occupational status is not effective during the early period of infancy but does become effective after a year and a half. The purpose of the present article is to analyse the effects of these variables on another criterion of development, namely, the *frequency* of utterance of speech sounds.

The data for phoneme frequency are presented in Table 1. The table should be read as follows: for the first bimonthly period the number of infants from non-laboring homes is 47 and the mean of this group is 61.1; the number of infants from the laboring groups is 15 and the mean is 59.9. An examination of the table reveals that the difference in each pair of means from the 7th age level (13-14 months) to the last age level consistently favors the non-laboring group.

Equations have been derived by the method of least squares for the means of each of the groups in Table 1. The equation for the means of the infants from non-laboring homes is $P_F = 59\, e^{.0633\, A}$, and that for the infants in workers' families is $P_F = 63\, e^{.0424\, A}$. The corresponding graphs are found in Figure 1. The curves are exponentials with different rates and represent the tendency for infants in homes of working people to rank below the other group, especially during the later part of the infant period.

It needs to be determined whether or not the difference in the rates of development of the two groups of infants is statistically a significant one on the criterion of frequency. In order to arrive at a reasonable estimate two types of analyses have been made. The homogeneity of variance

TABLE 1. Means for frequency, occupational groups.

Bimonthly Period	*Non-Laboring*		*Laboring*	
	N	*Mean*	*N*	*Mean*
1-2	47	61.1	15	57.9
3-4	62	66.2	18	70.0
5-6	59	73.7	16	74.6
7-8	49	76.2	15	77.1
9-10	47	81.9	15	78.3
11-12	48	90.5	14	94.7
13-14	46	88.0	11	87.2
15-16	43	93.5	12	88.3
17-18	39	99.0	11	93.4
19-20	30	100.8	11	90.5
21-22	29	111.8	8	90.0
23-24	23	121.8	8	95.9
25-26	24	146.4	8	111.8
27-28	17	150.5	7	115.7
29-30	13	170.6	6	123.8

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TABLE 2. Corrected Chi-square and P-values for the 15 pairs of distributions.

Bimonthly Periods	*Corrected Chi-Squares*	*P*
1	0.083	.80
2	0.121	.70
3	0.739	.40
4	1.946	.15
5	1.700	.20
6	2.708	.10
7	0.896	.40
8	0.152	.60
9	1.114	.30
10	4.043	.05
11	4.016	.05
12	2.009	.15
13	0.018	.85
14	2.342	.15
15	4.402	.05

of each of the 15 pairs of distributions about the means was determined, and the variance of the means themselves was calculated.

Table 2 presents the corrected Chi-square and P-values for the 15 pairs of distributions. It reveals that only three of the 15 values are significant at the 5% level of confidence and that these three occur in the last year of the two and one half years of infancy. The remaining values do not attain significance. On the whole, then, the pairs of distributions are homogeneous.

There remains the problem of testing whether the null hypothesis holds for the differences of the means of the two groups. A two-criterion design involving occupational status and age was used. The analysis was made in two stages of the period of infancy. One included the first one and one-half years (age levels 1 to 9), the second included the last year of infancy (age levels 10-15). The numbers in the subclasses have been corrected for disproportionality.

The analysis of variance for the means of the frequency data for the first one and one-half years is presented in Table 3. The analysis reveals that interaction is negligible, that age is highly significant, but that occupational status of the family during this period may be assumed to have no influence on speech sound development so far as frequency is concerned.

Table 4, which gives the analysis of variance for the last year of infancy, shows a different result. Here interaction also is negligible. However, not only age but occupational status as well are highly significant.

It may therefore be assumed on the basis of the foregoing analyses that in terms of the frequency criterion the occupational status of the family

TABLE 3. Analysis of variance for frequency,* two groups—first one and one-half years.

Source	df	SS	V
Age	8	76,514.98	9,564.37
Occupation	1	28.62	28.62
Interaction	8	1,489.09	186.14
Within Subclasses	549	134,984.66	245.87
Total	566		

Interaction: $F = \frac{186.14}{245.87} = 0.76$, $df = \frac{8}{549}$, not significant

Occupation: $F = \frac{28.62}{245.87} = 0.12$, $df = \frac{1}{8}$, not significant

Age: $F = \frac{9,564.37}{245.87} = 38.66$, $df = \frac{8}{549}$, 1%

*Corrected for disproportionality of numbers in the subclasses.

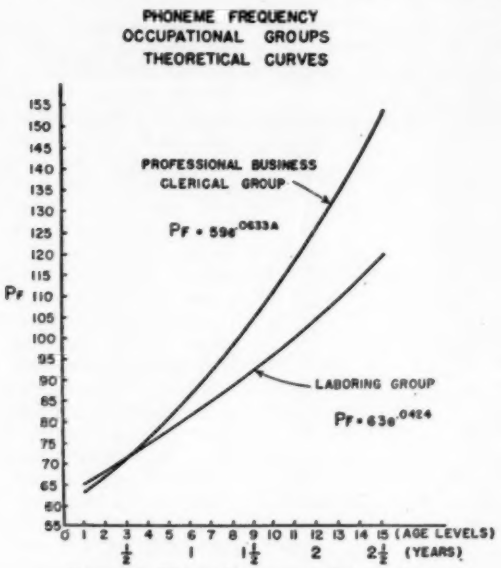

FIGURE 1. Theoretical curves derived from means of phoneme frequency production of groups of infants from laboring and non-laboring homes.

is a component in the speech sound development of infants. The influence of this factor, however, is not effective until the infant is about one and one-half years old. This means that infants in working families vocalize less frequently than other infants. Age is a highly significant variable in the development of the infant's speech behavior. The findings on the frequency

TABLE 4. Analysis of variance for frequency,* two groups—last year.

Source	df	SS	V
Age	5	78,988.74	15,797.74
Occupation	1	23,762.01	23,762.01
Interaction	5	2,585.08	517.02
Within Subclasses	172	160,162.38	931.18
Total	183		

Interaction: $F = \frac{517.02}{931.18} = 0.56$, $df = \frac{5}{172}$, not significant

Occupation: $F = \frac{23,762.01}{931.18} = 25.51$, $df = \frac{1}{172}$, 1%

Age: $F = \frac{15,797.74}{931.18} = 16.97$, $df = \frac{5}{172}$, 1%

*Corrected for disproportionality.

criterion of speech development are consistent with those on the type criterion previously reported (**1**).

SUMMARY

In this article speech sound data collected on two groups of infants, one composed of babies from business, clerical and professional homes, the other of infants from homes of laboring families, were analysed on the basis of phoneme frequency. The development of the two groups proceeds at different rates. The equation for phoneme frequency of infants from non-laboring families is $P_F = 59\ e^{.0633\ A}$ and that for infants in workers' homes is $P_F = 63\ e^{.0424\ A}$. When the data are subjected to an analysis of variance, F-ratios indicate significant differences between the two groups for age. The occupational component is negligible during the first one and one-half years, but during the last year it is highly significant. This result is similar to the findings when sound types are used as the criterion of speech development.

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LEST WE FORGET WE FORGET

The term and concept of repression suggest that material which *per se* could be recalled is excluded from recall because of its traumatic nature. If the traumatic factor can be clarified and dissolved, the material is again accessible to recall. But even the most profound and prolonged psycho-analysis does not lead to a recovery of childhood memory; at best it unearths some incidents and feelings that had been forgotten. Childhood amnesia, then, may be due to a formation of the memory functions which makes them unsuitable to accommodate childhood experience, rather than exclusively to a censor repressing objectionable material which, without such repression, could and would be remembered. The adult is usually not capable of experiencing what the child experiences; more often than not he is not even capable of imagining what the child experiences. It would not be surprising, then, that he should be incapable of recalling his own childhood experiences since his whole mode of experiencing has changed. The person who remembers is the present person, a person who has changed considerably, whose interests, needs, fears, capacity for experience and emotion have changed. The two mechanisms of forgetting suggested here shade gradually and imperceptibly into one another. They are neither alternatives nor opposites, but rather the two ends of a continuous scale.

From 'On Memory and Childhood Amnesia,' by Ernest G. Schachtel, *Politics*, Spring, 1948.

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The Speech Correction Foundation

Wendell Johnson*

THE GOALS of the Speech Correction Foundation may be simply stated. The Foundation is chiefly concerned with the development of teacher-training and research in the field of speech correction.

It is not the purpose of the Foundation to use its funds to pay for speech correction for individual cases. Funds for this purpose are made available by private and tax-supported welfare agencies. It is to be emphasized that the beneficent activities of such agencies, together with the rapid growth of speech correction programs throughout the country, are creating a demand for trained speech correctionists that is already out of hand. The teacher shortage is so grave that we may hardly expect to catch up with it for a generation.

This is the reason why the Foundation is trying to achieve a $50,000 annual fund for scholarships in colleges and universities where speech correction workers may be trained. There is an urgent need for several hundred such scholarships. Without them it will not be possible to recruit enough qualified young people into this field ever to wipe out the teacher shortage. Until we wipe it out, two very undesirable facts will continue to plague us. The first is that millions of speech defectives, young and old, will not be able to get the speech correction they need. The second is that unqualified workers will be employed in many situations, as they are now. The only answer to this lies in providing more and more adequately trained teachers.

The speech correctionists we are training, however, and the increased number we hope to train, can be no more effective than the methods and knowledge available permit them to be. That is why the Foundation is trying to raise $50,000 annually for scientific research. On this page in future issues of the *Journal* our more pressing research needs will be discussed. In the meantime, it is sufficient to stress the advisability of spending as much money to increase our knowledge and refine our methods as we spend in training teachers to apply the knowledge and to use the methods.

The immediate goals of the Foundation, then, are to raise each year $50,000 for scholarships and $50,000 for research. In order to administer the indicated program, the Foundation needs $25,000 for essential office expense, publication, mailing, and other necessary activities.

The members of the American Speech and Hearing Association and the friends of the Foundation are fully capable of raising $125,000 each year. Potentially, there are between five and ten million Americans directly interested in the Foundation's objectives. We need to reach them. You can send the Foundations Committee their names. You can tell them about the Foundation. Doing these simple things that are so easy to do, we are bound to succeed. Millions will benefit greatly from our modest efforts.

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Environmental Factors in Relation to the Speech of Cerebral Palsied Children

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Doris B. Williamson

AN INQUIRY into the etiology of speech defects of children presents a problem of many facets. Obviously, the answer cannot be found in any one single factor, as a study of speech defective children will clearly show. One must look for many causes and determine the importance of each in a given case.

Although much has been written concerning the etiology of speech disorders resulting from organic anomalies, as in the case of cleft palate, dental malocclusion, and central nervous system lesion, little is known of the etiology of speech disorders which do not result from such causes but which probably arise out of some environmental influence. Only recently has Johnson (**5**) advanced his diagnosogenic theory of stuttering. Wood's (**20**) excellent work is another study in which certain environmental factors have been assumed to play a part in the etiology of speech defects. The environment of the child is a factor which sometimes can be controlled and modified—improved if it is found lacking; whereas the disorders resulting from organic defects, for example, are many times relatively fixed and can only be 'made the best of.'

Speech defects, where organic disorders are present, are not always *entirely* the result of such organic disorders but may have psychological factors at their roots as well. For this reason the importance of environmental influences as causal factors in speech defects cannot be overemphasized. Certainly if this be true, more investigation needs to be done along this line. First of all, the extent of the relation, if any, between speech defects and environmental factors must be clearly demonstrated.

In working with the speech of cerebral palsied children, one is impressed with the imperfect relationship between the severity of the affliction and the adequacy of speech and other motor skills. As Carlson (**3**, 111) has observed, '... I realized that the severity of the physical handicap was a poor criterion of the spastic's fate, and that a study of his behavior in relation to the structural brain defect gave a much better idea of the prospect of helping him.' Pintner (**12**, 369) also points out that, while the speech involvements resulting from spasticity will be de-

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termined by the amount and degree of brain injury, 'a contributing and complicating factor in the speech of the spastic originates on a psychogenic basis.' Rutherford, in working with a group of cerebral palsied speech defectives at the Dowling Public School for Crippled Children in Minneapolis, failed to note speech improvement in some cases where improvement in general physical coordination was quite marked. That is to say, the speech and general physical condition may improve independently of one another.

The question is: what is to account for this discrepancy between speech status and general physical condition in the case of the cerebral palsied individual? In recent years several writers, including Palmer (**11**), McKibben (**9**), Berger (**2**), and others, have been concerned with the influence of the spastic's situation upon his physical condition. The implication is that there are factors existing in the environment of a cerebral palsied person which bear upon, impede, or accelerate his ability to improve, quite apart from any change in his physical condition.

It has been shown that maladjustment in the parents manifests itself in overt behavior toward the child in such a way that maladjustments will result in the child, with an effect on the child's behavior, including his speech behavior. Letz (**6**), for example, in investigating the emotional status of the parents of problem children, found that in 64 cases of children showing marked instabilities of behavior, 62 could be traced to parental maladjustment.

The importance of the personal adjustment of the parents in the development of the child can scarcely be overestimated. The statement that our childhood experiences make us what we are today hardly needs justification. Childhood behavior is concerned largely with getting response and with achievement. The way in which a child can get response from the mother is determined by the mother's experience. To quote Travis and Baruch:

> . . . the child's problem is determined by the mother's problem. (For all of us this was true.) Her problem is in turn determined by her own life experiences, her own thwartings, her own satisfactions. . . . The parent's feelings invariably bear influence on how the parent meets the child's demands. The parent's feelings may make him meet the demands in such a manner that the child is thwarted and frustrated beyond endurance. The parent's frustrations play a major part, thus, in determaining the child's problems. The parent's needs, his unrealized desires, his hopes, his ambitions, his pain, his fears —all these become a part of his child. All these enter into his child's problems. All these act as causes frequently in creating the very problems which the parent seeks to avoid. (**19**, 132-133)

Parental environment, then, especially as it relates to parental attitudes and personality, has a great deal to do with the development of the child and his speech. If the child is physically handicapped, his environment has an even greater influence on his development. Thus the environment of the cerebral palsied is of great significance in his development, and probably no group of handicapped children is more sensitive to environment and environmental pressures than is the cerebral palsied.

Evidence would therefore seem to indicate that the imperfect relationship between physical coordination and performance in the cerebral palsied person may be explained in terms of environmental pressures to which the cerebral palsied person is unusually sensitive, for, according to Palmer (**11**, 158), 'Many of the symptoms may owe their severity not to the brain lesion involved, but to the spastic situation.'

Thus this study was set up to determine the relation of the speech adequacy of the cerebral palsied chil-

dren and certain aspects of the parental environment.

Subjects, Materials and Procedure

The families used in this study were made available through the cooperation of the Colorado Cerebral Palsy Society. From the rolls of this Society, 41 families were drawn at random. The subjects, who lived in all areas of Denver—from the poorest residential district to the wealthiest — fell in income brackets which ranged from $90 a month to one so large that it could not be determined. The cerebral palsied children, 24 males and 17 females, had an age range of from 2 years, 6 months, to 23 years. Protestant and Catholic faiths were represented. All subjects were of the white race with the exception of one, who was negroid.

For the purpose of getting a general personality picture of the parents, the *California Test of Personality-Adult Series,* was given. The major purpose of this test is to reveal the extent to which the individual is adjusting to the problems and conditions which confront him. The test has been divided into two sections: (1) Self Adjustment based on feelings of personal security, and (2) Social Adjustment based on feelings of social security. Each of these divisions has been divided into sub-divisions which presumably measure such factors as self-reliance, sense of personal worth, sense of personal freedom, etc.

The *A-S Reaction Study* by Allport and Allport was used as a device that would tend to measure the disposition of an individual to dominate his fellows (or be dominated by them) in various face-to-face relationships of everyday life. It was felt that such measurement might give a clue to the amount of parental pressure exerted upon the child as well as a general idea of the disciplinary patterns of the family.

There was also an interest in using a device that would tend to measure the degree to which the subject desired a change of the *status quo* in his cultural life. The *C-R Opinionaire* by Theodore F. Lentz was selected for this purpose. The *Opinionaire* is designed to measure the conservatism or radicalism exhibited in expressed opinion. According to the test's author, the 'conservative' insists that progress should be made slowly and the *status quo* accepted, while the 'radical' believes in drastic and speedy changes and works for them in like manner. It was felt that the 'conservative-radical' tendency may manifest itself in parental reactions to cerebral palsied children. Sixty questions under such headings as education, religion, government, etc., constitute the test.

The *Mental Health Analysis-Adult Series* is a relatively new instrument in the field of psychological testing. Nothing is to be found in the literature concerning a critical evaluation of this test, owing to the recency of its publication. It is, however, the only instrument at present which purports to measure mental health as distinguished from personality. Reliability of the test compares favorably with other paper and pencil type tests. No statement of validity is available at the present time.

For a second test of the personalities of the subject, an adaptation of the Murray *Thematic Apperception Test* by Ruth Millburn Clark was selected. Murray (**10**) found that the *Thematic Apperception Test,* a projection-type test, was the most significant of the sixteen techniques he utilized in attempting to analyze personality structure, and its usefulness clinically has subsequently been well established.

In order to gain information concerning attitudes of parents regarding the future of their child and also regarding cerebral palsy as opposed to some other physical defect, an

original questionnaire was prepared. However, time will not permit discussion of that phase of this study, except to say that one part of the questionnaire included several personal questions through which the subjects indicated their job-status, occupational desires and socio-economic standing.

In order to have some estimate of the speech status of the child, three trained observers checked the speech of each child. Ratings were made at the same time but were made independently with the use of a rating scale. Speech was rated on a numerical scale ranging from one to five. Separate ratings were given articulation, voice quality, and general effectiveness.

Since the study is concerned with a comparison of speech adequacy and handicap severity of the cerebral palsied child, a rating by members of of the medical profession was necessary. This was achieved through the cooperation of each child's attending physician and the physical therapist at Children's Hospital in Denver. The medical doctor and the physical therapist collaborated in answering the following questions:

1. What general type of cerebral palsy does the child have? i.e., spasticity, athetosis, etc.
2. What type of physical involvement is present? i.e., diplegia, hemiplegia, etc.

The participating physician and the physical therapist were then asked to rate the overall muscular severity and the speech muscle severity separately on a scale of one to five. It is to be pointed out that in each case both the medical doctor and the physical therapist were familiar with the cerebral palsied child. The case history for each child was available for review. None of the speech ratings was known to those making the physical rating.

The fact that these ratings were given by various physicians has been recognized. However, each medical doctor cooperating was given the same instructions. In all cases the same physical therapist was working in conjunction with various medical men to complete these ratings.

In treating these data and in interpreting the results, a number of considerations should be kept in mind. In the first place, the limitations of paper and pencil type personality tests should be recognized. While the tests were given under conditions which met the conditions for reliability demanded by the tests, the obtained deviations of the group are, however, deviations from the norm of the particular test and may be interpreted only in terms of the particular test.

It should also be remembered that the relationship of the parents to the child must not be thought of as a one-way relationship. It is quite possible that the child, and especially the handicapped child, will have an effect on the parents and that this interaction will affect both parents and child in a profound way. Certainly, in attempting to relate the speech adequacy of the child to the personality and attitudes of the parents, no causal factor can be ascribed to either side. The child may be influencing the personality of the parents quite as much as they are influencing the speech of the child.

Another limitation in interpreting the results of this study lies in the fact that the number of cases is small. This makes it necessary to point out that the interpretation of all statisical data must be carefully guarded.

The speech of each child in this study was rated by three observers. The individual ratings within each group were then intercorrelated to determine the reliability of these ratings. Correlations of .9 plus would seem to indicate a high degree of reliability and a tendency on the part of

the raters to rate the same thing, presumably speech.

Since the correlations between the three categories of articulation, quality and general effectiveness were high, it seemed advisable to use only one of the categories in running correlations with other tests. The correlations with the overall effectiveness of the speech were the highest; consequently this category was used in all other correlations.

Before discussing the results of the several tests administered, a few general considerations may be worthy of note. A correlation of .305±.142 was found between the general muscular involvement and speech adequacy, while speech muscle involvement correlated .858±.041 with speech adequacy. Thus speech adequacy does not appear to be related to the general muscular involvement of the cerebral palsied individual, while the speech muscle involvement and speech adequacy seem rather closely related. These figures seem to bear out the expectation that where better speech was possible (so far as speech muscles were concerned), better speech would result.

Of the 41 children rated in this study, 24 were males and 17 were females. The possibility that sex could be related to speech adequacy was investigation, but no relationship was found.

An attempt was also made to determine the relationship between speech adequacy where there were siblings and where there were none. The speech of children with siblings tended to be better; however, the differences were not great enough to be of statistical significance.

No relation between speech adequacy and economic status was found. It was felt that where there was greater economic opportunity for training, better speech might result. There was no relationship between monthly income and speech adequacy. Likewise, no relation was discovered between job satisfaction in the father and speech adequacy. Job satisfaction might be interpreted as conservatism in the sense of accepting the *status quo*.

California Test of Personality: The male subjects tested did not deviate significantly from the norms established on the standardization population. These findings correspond to the results obtained by Wood (**20**).

The deviations of the mothers of cerebral palsied children in this study from the established norms for the *California Test of Personality* were pronounced. The results are also comparable to the findings of Wood.

The mean score for 'self-reliance' was in the 25th percentile. It is possisible that lack of assurance of their own ability to cope with the problem of training a handicapped child in speech and other skills requiring persistence and understanding would seriously limit the mothers in their attempt to deal adequately with the situation.

The mean score for the maternal group of subjects fell in the 20th percentile in 'sense of personal freedom.' This low score indicates that the mothers as a group did not feel free to engage in activities of their choice as the average adult in the standardization population. The frustrations of the mother which would be inherent in such a personality picture might be vented upon the child.

The only significantly high score which the mothers made on sub-test items was in the category of 'sense of personal worth,' their mean score being at the 75th percentile.

A-S Reaction Study: The fathers of cerebral palsied children did not tend to dominate others any more than did the average male in the population upon which the test was standardized.

The mothers tended to be slightly more submissive than the fathers.

The correlations are negative, which might indicate a very slight tendency for the child to become poorer in speech as the mother becomes more dominant.

The C-R Opinionaire: The mean score for conservatism of 35 fathers taking the *C-R Opinionaire* falls at the 61st percentile group when compared to norms of the test.

When the Pearson product-moment formula is used, there appears to be no correlation between this test and the speech adequacy of the cerebral palised child.

The mean score for conservatism of the mothers used in this study falls in the 67th percentile when compared with the test norms. The Pearson product-moment formula fails to reveal any correlation between the test results of the mothers and the speech adequacy of the children, and no relationship exists between this test and the speech adequacy when a partial correlation is made, holding the speech muscle involvement constant. However, a similar correlation holding the general muscle involvement constant reveals a correlation of .607±.099. In other words, as the mothers become more conservative, the speech of their children tends to improve. The author of the *C-R Opinionaire* feels that those showing high conservative tendencies are inclined to insist that progress be made slowly and the *status quo* be accepted and maintained. If such be true, it can be assumed that the more conservative mother would accept the child in his present status, would be willing to let the child progress slowly, would be less demanding, and as a result would cause fewer frustrations, fears, and tensions.

Mental Health Analysis: As a group, the fathers and mothers of the cerebral palsied children did not differ signicantly from the norms of the test in mental health.

Thematic Apperception Test: According to the *Thematic Apperception Test,* the fathers had a tendency to feel the environment slightly more frustrating than helpful, while the balance between neurotic tendencies and feelings of self-sufficiency was about equal. There was a slight relationship between feelings of adequacy in the fathers and speech adequacy in the children. This is in line with what would be expected, since the feelings of hope, courage, confidence, etc., which this category measures would be reflected in the child.

Mothers felt the environment slightly more frustrating than helpful and were about equal in neurotic symptoms and reactions of self-sufficiency.

No significant correlations were found with the exception of the partial correlation between speech adequacy and the category of 'reaction of self-sufficiency,' the opposite of 'neurotic symptoms.' A correlation of .729±.037 indicates a tendency toward better speech where the mothers are more emotionally stable, a finding which bears out the assumptions of this study. A negative but fairly strong correlation of –.483.±119 with the 'frustration' category would indicate that as the mothers became more frustrated the speech became poorer, another finding which bears out the assumptions of the study.

Conclusions

This study has seemed to indicate that certain aspects of the parental environment are important in relation to the speech status of cerebral palsied children. Later investigation can perhaps suggest whether the apparent relationships are in fact true relationships and whether they are causal. Other investigations set up over a period of several years' span may also yield information concerning later changes of attitudes and

speech behavior in the same family and child. There is evidence to suggest that this area is ripe for a multitude of studies.

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Follow-up in the Correction of Functional Articulatory Disorders

Vivian Roe*

FUNCTIONAL articulatory disorders are often spoken of lightly by people both inside and outside the field of speech correction, with the inference that anyone can work with a person who has a functional disorder. State laws, some of which were drafted without any advice from speech specialists, often allow funds for securing speech correction teachers in school systems, but provide only for the instruction of those individuals whose speech disorders are accompanied by some organic defect. Yet all who work in the field are confronted by a large number of cases which present functional disorders, particularly the articulatory type.

The correction of functional disorders of articulation should be more of a challenge to all speech correctionists than it appears to be at the present time. They frequently appear in connection with personality maladjustments, reading, spelling, and general language disabilities, and as such require careful and skillful professional handling.

One of the most important procedures in the correction of such functional disorders is that of *adequate follow-up*. Follow-up, as it is considered in this article, is not merely the casual check-up of progress which is usually made after an individual has supposedly been made conscious of his difficulty and has been shown how to correct it. In this context follow-up implies a number of the techniques which are necessary and which have been found successful in aiding individuals to establish correct speech patterns so that they are used in *all* speech situations without conscious effort.

From observation, one would deduce that practically everyone doing speech correction, whether in university clinics, private practice, or in public school systems, acknowledges the fact that consistent follow-up is important to successful speech re-education. However, one finds that in spite of this acknowledgment, too little actual work in this area is being done. Perhaps, because of misunderstanding of its purpose, this step in correction becomes too tedious. Often the training which a clinician has received has led him to believe that he has done his part when he has taught a child how to produce a sound, that the rest of the responsibility lies with the child, the teacher, or with anyone who will take it. In some instances clinicians, under pressure of heavy case loads, may wish to reduce the number of their cases as quickly as possible or to have a quick turnover of cases. Thus, too often the responsibility of the follow-up is left to the individual who has the disorder, or some cursory directions concerning motivation and stimulation are given to people who are untrained and who are not able to assume the responsibility.

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At times speech correctionists seem to forget that an incorrect speech pattern has to be replaced with a new one through a great deal of use in life situations before the disorder is 'eliminated.' Whenever possible, someone who is trained needs to stand by with suggestions and encouragement during the period of transfer from the 'knowing how' to the actual doing.

I

Assuming that all speech correctionists should be interested in increasing the amount of follow-up done and in increasing the quality of their work, one of the first considerations is of those problems which accompany the correction of functional articulatory disorders as found among children in primary, elementary, and secondary schools. It is generally agreed that the child with the disorder, the classroom teacher, and the parents may perform definite functions in cooperation with and under the guidance of the speech correctionist who has a sympathetic understanding of the child's problem and the patience and willingness to guide without being patronizing. Whether a child is in kindergarten or in high school, he can understand that in order to speak as he wishes to speak he will need to use his speech by talking with people, by reciting and reading, and by making a conscious effort to put into practice the new speech patterns which he has been shown and which it is possible for him to produce. But he must always be assured that he will not be expected to practice until he is ready to do so.

The case should be given some idea as to whether the period of correction is to be of long or of short duration. The clinician should be able to make such an estimate after taking an inventory of the severity of the disorder, the attitude of the individual toward his disorder, and the possible cooperation that can be expected from parents and teachers. It has been the writer's experience that the older student is more willing to accept his responsibility in follow-up if he understands the reasons for the procedure which is being used with him.

Making recordings of a child's speech at regular intervals is one way of giving him concrete evidence of the errors which he makes. The record can be played back and the child may write down the words on which he makes errors, or he may pronounce the incorrect words correctly as he hears them. The first recording may be played after the second or third recordings for purposes of pointing out differences. Usually these recordings serve as an excellent supplement to motivation for improvement. (It is usually not wise to give the recorded selection to the case for practice; having him work on other material appropriate for the same problems is much to be preferred.)

Recorders should always be utilized whenever they are available in individual school buildings, because their use serves, in addition to the above purposes, to stimulate a great deal of interest among principals and teachers in the progress of their pupils. The mirrophone, or wire recorder, also proves beneficial in helping an individual case to realize how much carry-over of new and correct speech patterns he is achieving in his speech and reading. The student may also be asked to listen and to watch for specific things in his reading, such as the making of distinct medial and final sounds. It is imperative that the reading material be interesting and of a difficulty that can be read fluently. It must be remembered that material for the grade in which the student is working is often too difficult for him to read with ease and assurance.

Another effective device consists of asking the case to select each day one word containing a newly acquired speech pattern and to use it as often as possible in his conversation. It is important to remember the fact that long after no errors are made on lists of words, a great many errors are made in conversational speech

situations. The speech correctionist should make it a point to observe the child occasionally in his classroom situation—while he is reading, giving a book report, or discussing something of interest to himself, such as a hobby, a game, or a trip.

II

The classroom teacher is an important person to consult in attempting to determine to what extent a disorder has been eliminated. As speech correctionists, we are likely to give undue weight to the fact that the classroom teacher is not a specialist and to conclude prematurely that she is not capable of helping us. An apparent attitude of indifference on the part of the teacher may actually be a result of the correctionist's reluctance to impart any specialized knowledge to her. It must be remembered that teacher training institutions have only recently begun to expose classroom teachers to the study of speech disorders and to the possibilities and methods of correcting them. Because of this, the correctionist should consider it a privilege to conduct in-service training classes for all teachers who are interested, discussing with them the kinds of speech disorders and the philosophy of the profession concerned with the correction of these disorders. It is usually necessary to assure them, for one thing, that there will seldom be occasion for any individual teacher to present a new speech pattern to a child, but that their help will be extremely valuable in the follow-up program.

When the teacher realizes that the correctionist is willing to share with her the specialized knowledge about the child from her room, her response will frequently be, 'What can *I* do to help the child?' In this case, the correctionist may first suggest that the teacher have a private conference with the child in which she will attempt to convey to him that she is pleased that he is working to correct the errors in his speech. In some instances, the teacher may need to prepare her class to help rather than to ridicule the child who has the difficulty.

From time to time the teacher may be asked to inform the child that improvement in his speech has been noticed, and she may ask the child whether or not he would like to have her remind him occasionally to read something over, paying attention to particular words or parts of words. The clinician may ask the teacher to watch for carry-over of new speech patterns into vocal music, book reports, and extemporaneous speech situations.

One method which has proved beneficial in giving a child assurance in conversational speech is that of arranging for the child to deliver messages and go on errands to the principal and other teachers in the school, having the teachers and principal report back as to whether the message was intelligible when delivered or whether it was free from particular errors.

Whenever possible, the correctionist should have conferences with the teacher, but when weekly contact is desired—especially in a large school or school system—it may be necessary to resort to a brief mimeographed form on which are written the current goals for each child and what progress has been made in each case. The form may also be used to ask the teacher's help in the application of what has been taught and to request a report from her regarding any progress or lack of progress she may have noticed over a period of a day or a week.

III

Parents likewise may be valuable allies in a follow-up program. Although the parents themselves may show some evidences of speech difficulty, or may be so accustomed to hearing the speech containing the errors that they do not realize the extent of the disorder, they can nevertheless be helped to understand the child and his problem. The necessity for patience and encouragement can be explained, as can the steps which

are necessary before their child will be able to speak normally. They must be helped to understand why a child cannot be stopped and reprimanded each time he makes an error.

Explanations, when presented in a tactful way, may prevent the parents' resentment toward the speech correction class and the embarrassment which many parents experience when their child presents some deviation from the 'normal.' In the absence of such explanations (and occasionally in spite of them) parents may feel as one parent evidently felt when she reluctantly came to a conference saying that she was very angry because it was necessary for her to come to school—she expressed the opinion that her child was smart enough 'to talk all right if he wanted to.'

In two schools with large populations an attempt was made to have the parents of all children with speech defects come to a conference as soon as adequate speech examinations had been given. The philosophy upon which the corrective work was based was explained, and demonstrations were given of the methods which were to be employed. The parents were informed that they would not be expected to present the new patterns to the children but that their help in commending their children for improvement and effort would be very important. They were also asked to report any unfavorable attitudes or comments made by their children in regard to the correction program.

At the close of each corrective session, the correctionist sent to the parents a report of the child's progress. As soon as the child was performing the speech pattern with ease, the parents were sent suggestions as to concrete contributions which they might make in connection with the follow-up. Sometimes they were requested to ask questions which should be answered with specific words containing sounds on which the child was currently working—or to read a play, or story, to the child, with the child listening particularly for good expression and word endings. Sometimes suggestions were made for playing a 'telephone game' in which the parent and child stayed in separate rooms working for loudness and distinctness. Although this experiment was not scientifically controlled, the consistent weekly follow-up assisted greatly in maintaining the interest of both the parents and the child. The correction of errors was apparently more rapid than it would have been otherwise.

To the speech correctionist with the heavy case load, this intensive follow-up might appear to be a burden, but the compensations are many. As an alternative to an over-all program of follow-up, one or two schools in a system might be selected for intensive work of this type each semester.

In this and all other aspects of follow-up, it is important not to forget the value of making a written report from time to time of the child's progress. Such a report is essential before the summer vacation. With it should go concrete suggestions for further application of the new speech patterns so that the child may not lose what he has gained and at the same time may continue to improve. When school begins again in the fall, it is especially important to make a systematic check of the amount of gain or loss during the interval and to express appreciation to those parents who have carried on during the vacation period.

IV

An additional side of the problem is to be found in the necessity for a follow-up program for those individuals who are examined in clinics and those who have been given some intensive training in clinics. To be sure, in most cases full comprehensive reports explaining the extent of the disorder, the progress made, and the progress expected, are sent to the parents and the classroom teacher. Instructions are usually given as to what can be done to further improvement.

There are, however, extentions of this basic procedure which would make it much more useful from a follow-up point of view. For one thing, clinicians need to be certain, in writing their reports, that their scientific knowledge is transposed into language which can be understood by anyone. After the initial report, letters should be sent out from time to time inquiring about the extent of the improvement after the intensive clinic training, whether interest in continuing the corrective work has been maintained, and whether there are any current problems with which the person would like to have help. These additions take time and energy, but parents are able to continue working with a child much more easily and conscientiously if they realize that someone else is interested and rather expecting improvement. An individual too often makes a good start in the elimination of a speech disorder and then is suddenly doing no more work. When this is the case, it is possible that he will feel 'let down' and may easily begin to feel that his difficulty is hopeless. Continued demonstrations of interest are important in easing the embarrassment which an individual might feel in the event that at a later date he decides, or someone else decides, that he needs further help. In such cases, explanations and motivation would need to be more than adequate.

At a hospital clinic in the Middle West, after speech examinations are given, a brief demonstration is made for the parents showing the type of disorder and the possible corrective measures. The only suggestions for teaching correct patterns and for follow-up consist of lists of words—one list for each consonant sound. Parents tend to become discouraged because often as much as six months to a year elapse before the child is returned to the clinic for re-examination. When the child is returned, little or no improvement has been shown as a rule because neither the parents nor the child understand what is expected of them.

One solution to the problem which clinics meet in attempting to follow up their work might lie in the contacting of trained speech personnel in centralized areas to which people in rural areas could go for periodic check-up interviews and for further suggestions regarding aids for improvement. So that such cases could afford these services, it might be wise to ask some organization which is looking for a worthwhile charity project to sponsor the clinic. At the same time, it is necessary to ask each case to pay some fee, however small, since interest in following the directions received in follow-up seems to be consistently greater when some sacrifice is made.

The person who is doing private practice in speech correction is no doubt more likely to do adequate follow-up work than others who find it necessary to carry large case loads. The private correctionist usually does not feel the pressure to dismiss a case until all the necessary work for the elimination of the disorder has been completed.

V

In conclusion, it must be remembered that no matter whether the person with the functional articulatory disorder is in school or out of school, whether he is a child or an adult, or whether the disorder presents one or many problems, aid should be sought from everyone in the person's environment who can contribute to his improvement and who will consider it a challenge to stay with him until the work is done—until the individual is ready to take his place in society because he has the means of adequate communication.

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An Experimental Program for Hard of Hearing Children

D. E. Morley*

MICHIGAN'S hearing conservation program is carried on by the Bureau of Maternal and Child Health of the Michigan Department of Health. In the course of the program's group audiometric testing, pure tone acoustic examination, follow-up home calls, and medical referrals, a group of hearing handicapped children had been found for whom no further medical intervention was indicated. These children have sufficient loss to be a retarding factor academically and socially, but it is not of an extent which warrants their attendance at a school for the deaf. In each case, local special class facilities for acoustically handicapped children are not available.

The director of the Bureau of Maternal and Child Health contacted the University of Michigan Speech Clinic to determine whether its hearing rehabilitation division could provide a 1947 summer program for an experimental group of children with a view to further development of such service in the future if results proved to be satisfactory. A plan was evolved which made it possible for a group to be brought to the Speech Clinic for acoustic examination and hearing aid selection, followed by a six-week intensive training period in residence at the Rackham School of Special Education at the Michigan State Normal College, Ypsilanti. Ypsilanti is seven miles from Ann Arbor. The training was supervised by a special teacher employed for the project by the Division of Special Education of the Michigan Department of Public Instruction, under the supervision of the University of Michigan Speech Clinic and the Division of Special Education. The training included acoustic (auditory) training, lip reading instruction, speech work, and correlated activities. The program ran five days a week for six weeks.

Preliminary Tests and Hearing Aid Selection

The seven children accepted for the experiment were between the ages of ten and twelve years. Each was given an otolaryngological examination prior to the acoustic examination and hearing aid selection. Conferences were held with the respective parents and agreement for cooperation was obtained in which it was understood that the Michigan Department of Health would provide a hearing aid recommended by the University of Michigan Speech Clinic and board and room for a six weeks training program. In a few instances, parents were able to make partial payment for children's board and room.

The acoustic examination consisted of air and bone conduction tests using the Western Electric 6BP audiometer and speech reception tests, threshold and discrimination, using a dual channel attenuated electro-acoustic system. Spondee word lists (**3**) were used to determine speech reception thresholds. Familiar phonetically balanced (PBF) word lists (**2**) were used to evaluate

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speech discrimination. The two types of word lists used are those developed at the Harvard Psycho-Acoustic Laboratory. During the bone conduction tests the Pilling Witting Masker was used on the ear not under test.

Hearing aid selection was made from the Clinic's collection of instruments, all of which have been accepted by the Council on Physical Therapy of the American Medical Association. With each of the instruments considered for the individual's use, an aided threshold was determined using the spondee word lists over the dual channel system. Comparative speech discrimination tests were run on the instruments providing the best threshold scores. An impression was made of the ear to be fitted, and an ear mould was fabricated for those children requiring air conduction receivers.

During the first days of the training program additional evaluations were made of each child. A voice recording and a speech analysis were made and achievement, general ability, personality, and social adjustment inventories were given. The Metropolitan Achievement Test, intermediate battery, Form A (**1**), the Pintner General Ability Test, intermediate, Form L, non-language (**4**), the California Test of Personality, elementary, Form A (**5**), and the Washburn Social Adjustment Inventory, Thaspic Edition (**6**), were the tests given under the supervision of Dr. Frances Gates of the Rackham School of Special Education, Ypsilanti.

Approximately six months after the termination of the summer training program all the children returned for acoustic, achievement, general ability, personality, and social adjustment retests. The observable results of this project are obtained from a comparison of each child's performance on the first tests and on the re-tests. Supplementary information has been received from parents.

Training

Five sorts of training were provided: acoustic (auditory), lip reading, speech, correlated experience activities, and parent instruction.

Both a group aid and the children's individual hearing aids were used in the acoustic training. The individual aids were worn for limited periods at the beginning of the training. By extending these periods, the instruments were finally worn throughout each day and evening. The importance of listening and paying attention was emphasized. Stress was put on the supplementary relationship of the eye and ear and the development of the use of residual hearing. Singing was done to the accompaniment of recorded familiar tunes. Instruction was given in the care and use of the individual's aid.

Daily lip reading instruction provided training in lip reading from the front and from the side of the speaker's face. As with the acoustic training, in the lip reading instruction correlation was made with auditory stimuli.

Specific speech instruction was given to suit the needs of the individual. The Bell Telephone visible speech apparatus provided a motivating adjunct in pointing out visually the errors of speech production and demonstrating improvements obtained.

As the children learned to use their hearing aids, and as they became better adjusted to their use, field trips of various sorts were taken to provide correlative experiences. Visits to the local fire station, the campus science hall and observatory, the carillon tower, an airport, an art exhibit, and other side trips provided interest stimulating experiences and subject matter for group discussions on succeeding days.

During the fifth week of the training program the parents of the children spent a day in observation and instruction. During the forenoon they observed training techniques, and indi-

vidual needs and progress were pointed out. In the afternoon they attended a discussion-demonstration concerning acoustic and hearing aid problems. It was felt that this day would provide the parents with some knowledge of the sort of training the children were receiving and would enable them to assist them in making a more effective carry-over of the use of the training and their aids at home and at school.

Results

In recording the results of this project, the *individual* child's response, development, or changes were stressed, inasmuch as a small group of acoustically handicaped children was used. Chief interest is focused on the comparison of the individual *before* he received a hearing aid and training and an examination of him approximately *six months later*. Therefore, in examining the following information, one should select one child at a time and follow him through the various listed results. In the general comments at the end of the description of results note will be made of any general group trends.

Acoustic Results:

The following chart shows: (1) spondee thresholds without the hearing aid, (2) spondee thresholds with the hearing aid, (3) PBF discrimination without the hearing aid, and (4) PBF discrimination with the hearing aid. Lists were presented through the dual channel electro-acoustic system, free field, into a test room with a noise level of 30-35 db as measured by the General Radio Sound Level Meter, type 759 B. These tests weer given (1) prior to training and at the time the hearing aid selection was completed, (2) at the end of the training program, and (3) approximately six months after the training program. (See Table 1.)

Achievement

Comparative achievement before and after the training period was measured by the Metropolitan Achievement Test, intermediate battery, Form A. Figure 1 shows the

	SPONDEE THRESHOLD (50%) (score in decibels)						PBF (50%) (score in decibels)					
	Without Aid			With Aid			Without Aid			With Aid		
	1 6/15	2 7/30	3 12/11	1 6/15	2 7/30	3 12/11	1 6/15	2 7/30	3 12/11	1 6/15	2 7/30	3 12/11
J.B.	53	68	44	19	22	17	58	71	50	23	25	20
M.D.	74	67	65	30	24	19	83	74	73	32	30	29
R.E.	80	66	66	42	34	32	87	69	72	53	40	36
G.H.	55	67	65	23	30	28	68	67	67	24	31	25
D.K.	61	55	47	38	20	19	62	55	53	22	25	23
T.M.	60	61	63	30	26	24	69	64	68	40	32	38
M.R.	68	67	67	35	30	22	72	75	74	27	37	32

Table 1. Comparison of spondee thresholds and PBF discrimination with and without the assistance of hearing aids.

amount of academic growth as measured for each child. The growth indicated represents progress since school reconvened in September—a period of three months.

General Ability

To obtain an index of change in general ability, the Pintner General Ability Test (intermediate battery, Form A, non-language) was used. Figure 2 shows the result of comparisons of the tests given early in July, 1947, and on the following December 10. This bar graph indicates amounts of *improvement* made by each child in (1) Median S. Score, (2) Mental Age, and (3) I. Q.

Personality and Social Adjustment

Two standard tests were used to obtain comparative measures of personality and social adjustment: (1) the California Test of Personality, elementary, Form A, and (2) the Washburne Social Adjustment Inventory, Thaspic Edition.

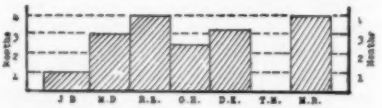

FIGURE 1. Estimated academic growth for each child during first three months of the school year following the training program.

The results of these tests were examined for comparative changes between test and re-test *in individual items.* Admittedly, the results of such tests have not been regarded as infallible, but general trends in the individual items of the tests may be noted in Figure 3. In some instances, noticeable improvement or regression may be significant in respect to the particular child tested.

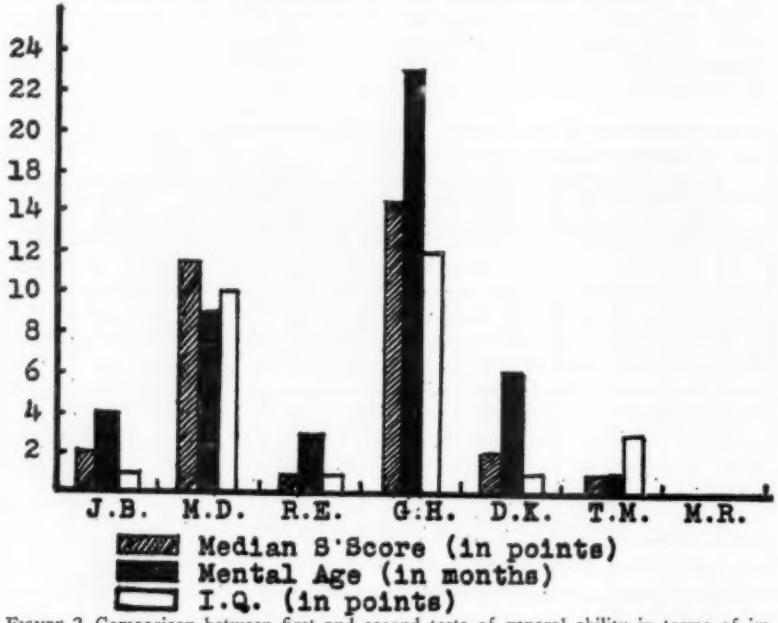

FIGURE 2. Comparison between first and second tests of general ability in terms of improvement in (1) Median S Score, (2) Mental Age, and (3) I. Q.

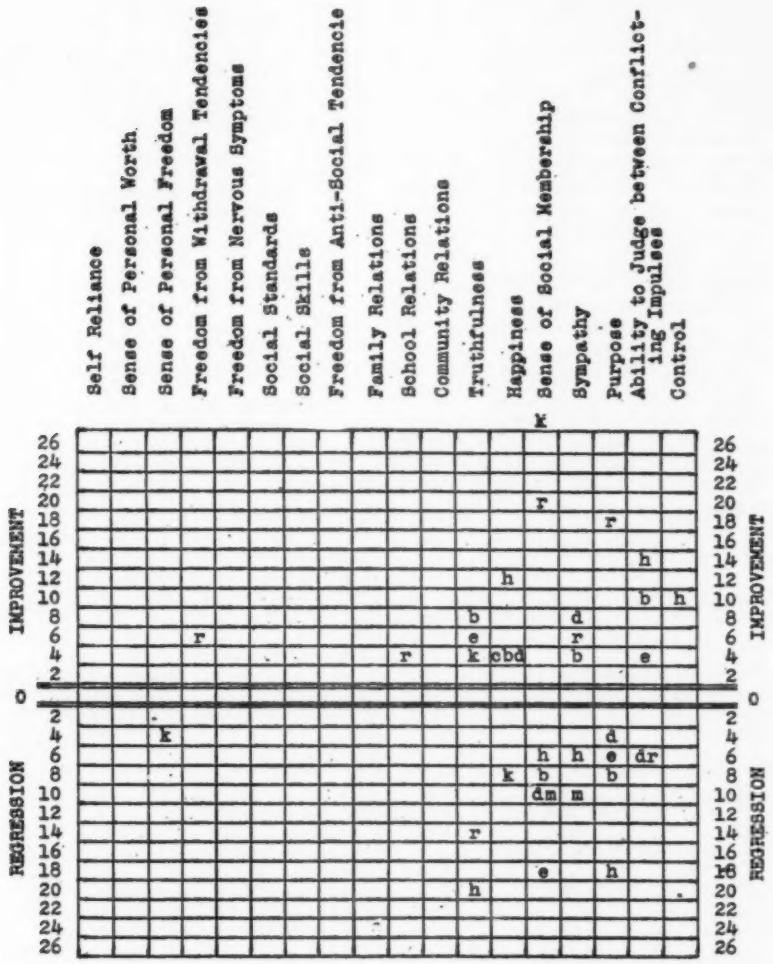

FIGURE 3. Exceptional variations in test performance for each child between first and second tests on items contained in the California Test of Personality and the Washburne Social Adjustment Inventory. (KEY: b=J.B., d=M.D., e=R.E., h=G.H., k=D.K., m=T.M., r=M.R.)

The California Test of Personality contains the following items: self reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawal tendencies, freedom from nervous symptoms, social standards, social skills, freedom from anti-social tendencies, family relations, school relations, and community relations.

The Washburne Social Adjustment inventory contains the following items: truthfulness, happiness, sense of social membership, sympathy, purpose, ability to judge between conflicting impulses, and control.

With certain exceptions, there was no great general variation of the scores of the first and second test of each child. The exceptions which did occur are indicated in Figure 3. (If a child's symbol is *not* recorded at a certain item, it may be assumed that no particular change was observed for that item between first and second testing.)

Comparisons of the Various Tests For Each Individual

After examining the comparative results of each individual's performance on the various tests, the following individual summary can be made, including the reaction of the child's parents.

J. B.

Acoustic:

Average threshold without aid:	55 db
Average threshold with aid:	19 db
Gain:	36 db
Average PBF threshold without aid:	59 db
Average PBF threshold aid:	22 db
Gain:	39 db

General Ability:

Median S score and I. Q. remained essentially unchanged. Four months growth in mental age.

Achievement:

One month academic growth since September.

Personality and Social Adjustment:

Gain shown in the items concerning truthfulness, happiness, sympathy, and ability to judge between conflicting impulses.

Some regression shown in the items concerning sense of social membership and purpose.

Parents' reaction:

A letter from the parents approximately six months after J. B.'s training indicated their awareness of mental growth, alertness, being better satisfied, better perception of home noises, and sociability.

M. D.

Acoustic:

Average threshold without aid:	68 db
Average threshold with aid:	24 db
Gain:	44 db
Average PBF threshold without aid:	76 db
Average PBF threshold with aid:	30 db
Gain:	46 db

General Ability:

Noticeable gain in Median S. Score (11½ points).

Improvement in I. Q. (10 points).

Improvement in mental age (9 months).

Achievement:

Three months academic growth since September.

Personality and Social Adjustment:

Gain shown in the items concerning truthfulness, happiness, sympathy.

Some regression shown in the items concerning sense of social membership, purpose, ability to judge between conflicting impulses.

Parents' reaction:

A letter from the parents approximately six months after M. D.'s training indicated that she relies heavily on her hearing aid and does not want to be without it. The persistence of an articulatory defect was noted.

R. E.

Acoustic:

Average threshold without aid:	71 db
Average threshold with aid:	36 db
Gain:	35 db
Average PBF threshold without aid:	76 db
Average PBF threshold with aid:	43 db
Gain:	33 db

General Ability:

No particular gain in Median S Score and I. Q.

Three months growth in mental age.

Achievement:

Four months academic growth since September.

Personality and Social Adjustment:

Gain shown in the items concerning truthfulness, happiness, ability to judge between conflicting impulses.

Regression shown in the items concerning sense of social membership and purpose.

Parents' reaction:

A letter from the parents approximately six months after R. E.'s training indicated their awareness of his willingness to wear the aid and his dependence upon it. He is not sensitive about wearing it. Improvement was noted in his ability to hear both at school and at home. Some difficulty is experienced in segregating voices and sounds.

G. H.

Acoustic:

Average threshold without aid:	62 db
Average threshold with aid:	27 db
Gain:	36 db

General Ability:

Marked improvement in Median S Score (11½ points).

Mental age (23 months), and I. Q. (12 points).

Achievement:

Two and one half months academic growth since September.

Personality and Social Adjustment:

Gain shown in the items concerning happiness, sense of social membership, ability to judge between conflicting impulses, and control.

Regression shown in the items concerning truthfulness and purpose.

Parents' reaction:

A letter from the parents approximately six months after G. H.'s training reported marked improvement in attitude and deportment at school and at home. She is reported to be 'an entirely different child.'

D. K.

Acoustic:

Average threshold without aid:	54 db
Average threshold with aid:	25 db
Gain:	29 db
Average threshold PBF without aid:	57 db
Average threshold PBF with aid:	23 db
Gain	34 db

General Ability:

Little change in Median S Score and I. Q. Six months growth in mental age.

Achievement:

Three and one quarter months academic growth since September.

Personality and Social Adjustment:

Gain shown in the items concerning truthfulness, sense of social membership.

Slight regression in the items concerning sense of personal freedom, happiness, sympathy, and control.

Parents' reaction:

A letter from the parents approximately six months after D. K.'s training reported a marked decrease in his being noisy and nervous, his use of less volume when talking, and his dependence upon his hearing aid. Improvement in school relations and interest were noted.

T. M.

Acoustic:

Average threshold without aid:	61 db
Average threshold with aid:	26 db
Gain:	35 db
Average PBF threshold without aid:	67 db
Average PBF threshold with aid:	36 db
Gain:	31 db

General Ability:

No particular gain in Median S Score and mental age. Slight gain in I. Q.

Achievement:

No academic growth since September.

Personality and Social Adjustment:

Slight gain for the item concerning sense of personal freedom.

Regression for the items concerning sense of social membership, sympathy, and purpose.

Parents' reaction:

A letter from the parents approximately six months after T. M.'s training reported that he had had mechanical trouble with the instrument, but after this had been corrected there was some improvement noticed in his studies. General reaction was one of disappointment over the failure of the instrument.

M. R.

Acoustic:

Average threshold without aid:	67 db
Average threshold with aid:	27 db
Gain:	40 db
Average PBF threshold without aid:	73 db
Average PBF threshold with aid:	32 db
Gain:	41 db

General Ability:

No improvement in any of the divisions.

Achievement:

Four months academic growth since September.

Personality and Social Adjustment:

Gain for the items concerning freedom from withdrawal tendencies, freedom from nervous symptoms, sense of social membership, sympathy, purpose.

Some regression for the items concerning truthfulness and ability to judge between conflicting impulses.

Parents' reaction:

A letter from the parents approximately six months after M. R.'s training indicated increased happiness, better ability to get along in school, and her dependence upon the instrument.

Observable Group Trends

Although the chief emphasis of this project was on the individual child's responses, development, or changes, several group trends were observed.

Acoustic:

In general each child's response to the spondee words showed a threshold at less intensity than the threshold for the discrimination of the phonetically balanced words, both with and without the hearing aid. One or two children showed approximately the same thresholds for each on one of the days, but the average for the three tests showed the intensity for the spondee lists to be less than for the phonetically balanced.

In each case the spondee threshold gain obtained by the use of the hearing aid on the day of the hearing aid selection was retained approximately six months later. A number of the children showed noticeable improvement over the first aided threshold.

In each case the threshold for the discrimination of the phonetically balanced words obtained by the use of the hearing aid was retained six months later. A number of the children showed noticeable improvement over the first aided threshold for the phonetically balanced words.

Achievement:

Using the hearing aids, five of the children showed steady, average academic growth since returning to school. Such growth would be expected of average hearing pupils.

One child showed slight growth, and another showed none. It may be irrelevant to note that the child who showed no growth had had trouble with his hearing aid.

General Ability:

With the exception of one child, the children maintained scores in the Median S Score, Mental Age, and I. Q. comparable to those achieved on the first test.

In two cases noticeable improvement was made.

Personality Test and Social Adjustment Inventory:

Taking the group as a whole, the most general improvements were discernable in freedom from nervous symptoms, school relations, freedom from withdrawal tendencies, and happiness. Not all the children showed marked improvement in all these items, but the majority showed some.

The item in which none showed improvement was community relations.

In some of the children the sense of social membership had improved markedly. In others it had regressed just as markedly.

In the other items covered by the two tests used, no general group trend toward improvement or regression was noted.

Parents' reaction:

With the exception of the parents whose child had had mechanical difficulties with his hearing aid, the parents were enthusiastic about the results achieved by providing the hearing aid and training.

Summary

Hearing aids and a six weeks summer program of instruction in acoustic training, lip reading, speech, and correlated experience activities were provided for a group of hard of hearing children for whom no further medical treatment was indicated and for

whom no special class facilities were available. Acoustic examinations were made prior to the program at the time of the hearing aid selection, at the conclusion of the training program, and approximately six months later. Achievement, general ability, personality, and social adjustment tests were made during the program and approximately six months later.

The observable results or trends in this project were obtained from a comparison of each child's own responses, development or changes on the first tests and on the retests. Supplementary information was received from the parents of the children.

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PHYSICIAN, PAIN THYSELF!

Experience stands on its own dunghill in medicine, and reason yields it place. Medicine has always professed experience to be the touchstone of its operations. Plato was right to say that good doctors themselves ought to have had the diseases they want to cure, and been subject themselves to the misfortunes and circumstances which they have to diagnose. Let them catch the pox if they want to know how to cure it. I'd trust such a doctor.—*Montaigne (1573-1592).*

The Practical Cogitator, selected and arranged by Charles P. Curtis, Jr. and Ferris Greenslet (Houghton-Mifflin, 1945), 259.

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Should the Speech Therapist Be a Voice Therapist?

Emil Froeschels*

A SPEECH THERAPIST who is not at the same time a voice therapist is, in my opinion, not fully prepared to meet every demand that may be put upon him. The necessity of combining both scopes will be presented in this article from both a physiologic and a pathologic viewpoint.

Needless to say, we are dealing here with only oral speech and not with sign language. Oral speech, physiology teaches us, consists of several procedures within the central and peripheral nervous systems and of three main functions within the executive organs. In describing briefly the procedure in the central nervous system the various views held by different schools cannot be thoroughly considered. The simplest way to transcribe schematically the inner procedures still seems to be the way of Wernicke and Lichtheim (**4**). Their scheme differentiates between the expressive, the receptive, and the transcortical speech centers. The receptive center, named for its discoverer, Wernicke's center, is thought to be the part of the brain in which a process to date unknown—perhaps chemical or electronic—builds a somatic basis for the acoustic perception of speech sounds, syllables, words, and phrases. It is assumed that the acoustic recollection of sounds, etc., also occurs in that center. It is located in the uppermost of the three temporal convolutions of the left brain in right handed, and of the right brain in left handed people. The expressive center, Broca's center, has to do in an analogous way with the imagination of the movements necessary to utter sounds, syllables, words, etc. The connection between these two centers is effected by pathways which cross the island of the brain. Parrot-like repeating of speech (without understanding) takes place entirely within the centers and the pathways mentioned.

A child at the beginning of the development of spontaneous speech will perceive words with the help of Wernicke's center, will transmit the impetus to speak from there to Broca's area from where pathways reach to the anterior central convolution, the corona radiata, the inner capsule, and finally the peripheral nerves going to the breathing-voice-articulation mechanism. Understanding of the meaning of words and the meaningfulness of words for expression depends upon the cooperation of other centers with the centers of Wernicke and Broca. If, for instance, a person wants to name something that lights a room he will think of a certain sphere-like form made of glass and containing coils of wire, and this imagination, being visual, is connected with the physiologic function of two visual centers in the occipital part of the brain. If he thinks at the same time of a burning sensation which he once had when he touched the bulb and of the hardness of the glass, other centers of the brain are engaged. The

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smell of a flower is connected with the smelling center at the lower surface of both frontal convolutions. All these centers are schematically drawn as one circle in Wernicke-Lichtheim's scheme: 'transcortical center.' This circle is connected schematically with Wernicke's and Broca's centers.

Understanding of the meaning of a word and the utterance of a word understood by the speaker asks for cooperation of the Wernicke and transcortical centers and of these centers and Broca, respectively. There is not time here to deal with the more recently developed theories of Marie (**4**), Pick (**4**), Head (**4**), and K. Goldstein (**4**). Yet it is necessary to mention that Goldstein's theory of the involvement of the whole mental, psychic personality, if a certain center or pathway is affected, should be kept in mind if one wants to avoid underevaluating the resulting defect from any localizable injury.

It must be stressed that the signifiance of each and every speech center in an individual depends on the *psychological type* (**1**). An 'ear-minded' person, for instance, may not be as much handicapped by an injury to Broca's center as a 'motor-minded' person because in the former the whole central speech process will be chiefly acoustic.

We come now to the three main functions within the executive organs: breathing, voice production, and articulation. It would not be appropriate here to give a detailed description of the physiology of breathing. It is important to mention the four types of breathing, namely, chest, abdominal, rather diaphragmatic, flank, and mixed breathing. It has been claimed that diaphragmatic and flank breathing play a bigger part in singing than in speaking. This opinion will be scrutinized later.

Voice production starts with rhythmical vibrations of the vocal cords stimulated by breath that escapes through a narrow opening between the vocal cords (glottis). As to the part which the different cavities above and below the vocal cords play in voice formation, there are various opinions. One school claims that especially the u p p e r chambers—the pharynx, mouth, the nose and its sinuses—play a role similar to that of the resonating bodies of musical instruments. The opposing theory claims that it is primarily the strength of the puffs with which the air escapes and especially the duration of the closing period of the vocal cords that account for the loudness and the richness of the tones. Here I want to refer to an experience of mine in the first World War: A soldier committed suicide by cutting his throat through to the vertabrae column. The whole head hung down and his sighing was rather weak which I attributed to the missing upper resonating chambers.

As to the lower resonators, they are chiefly the trachea and the larger bronchial tubes. I believe that their resonating influence is generally underrated. Stockert and I (**5**), and independently Bass (**2**), have studied the question by listening to the sounds within the chest, pressing the ear close to the chest wall and plugging the other ear. I found that any condensation or obstruction within the bronchial tree changes the sound to such an extent that if the person says 'ah' the examiner hears 'oo.' This proves that normally the bronchial tree is not without influence upon the sound formation.

Besides resonance, reflection seems to play an important role in voice formation. If the vibrating air touches the root of the tongue, the wall of the pharynx, the palate, etc., reflection takes place in such a way that the angle at which the air is thrown away from the surface is exactly the angle at which it touched the surface. Voice teachers use reflection to direct the vibrating air, for instance, toward points where they want to provoke resonance. A reflection may just get in

the way of another air wave and so both may dampen or even kill each other. In parenthesis it may be said that the very complex formations of the mobile parts are of such a variety in an individual and in different persons that there is no means of studying reflection in any case. It may be doubted that science will ever succeed in understanding all these complexities. That is one of the reasons why the therapists and educators are never able to give advice in a mechanical way for overcoming a single failure due to a wrong reflection.

Articulation brings forth the single speech sounds. There are certain obstacles formed in the larynx, pharynx and mouth which the air overcomes in various ways. If the obstacle is in the form of a narrow passage the resulting sound is a fricative. If it is a closure, the resulting sound is either a plosive or a nose sound. For the nose sounds, the soft palate has to be dropped and the closure within the mouth forces the air to pass through the nose. In the fricatives and plosives the soft palate and some protruding muscles of the pharyngeal wall close the posterior entrance into the nose. The air escapes either through a narrow passage (fricative) or through the rapidly opened closure (plosive). The air used may vibrate either rhythmically (tone) or not rhythmically (noise). The terms 'voiced' and 'voiceless' sounds, respectively, are also used, but are not appropriate to signify the frequent pathological features of noises mingled into tones. (Very few voices are really free of noises. One of the most frequent habits of singers and speakers is to give out more breath than necessary, only part of which vibrates rhythmically while the remaining noisy air breaks the rhythm. This occurance is called 'waste of air.')

With regard to the discussion of resonance and reflection, it becomes clear that all the obstacles mentioned before may influence the tone production. It is therefore clear that articulation and voice production are closely related to each other and can be considered separately only theoretically.

In speaking, as well as in singing, the central nervous mechanism and the three main functions briefly described above are engaged. It should be mentioned here that according to general opinion the receptive center for music, and thus for singing, is located in the second temporal convolution and the expressive center in the second frontal convolution of the brain (again on the left side of right handed people).

The differences between speaking and singing are still subject to much controversy. It has been said that in conversational speech the amount of air used is 20% to 30% less than in breathing when one is quiet, while in singing the amount of air used is much greater. It has also been maintained that in speaking only 5 to 6 tones are used and that the pitch changes almost regularly within the single syllable, while in singing the whole compass may be used and the single syllable as a rule keeps at one level. The length of the vowel is shorter in speaking than in singing, and in speaking the rhythm obeys the meaning to be expressed, while in singing it obeys mathematical musical laws.

There are many discrepancies in these differentiations. Children, for example, but also adults, especially when excited, use in speaking an even wider range of tones than in singing. Orators and actors often use a breathing technique very similar to that of singers. Moreover, the rhythm of those spoken verses and phrases is very similar to the rhythm of songs and arias. There remains, then, only the length of the syllables and the stability of the pitch in singing that differ from these qualities in spoken speech. But even these differences are not always present, as we can observe, for instance, in monotonous speech and

drawled speech. And, finally, there is the assumption that vibrato is characteristic only for singing and not for speaking as indicated by Seashore (**7**). But this assumption does not hold either, since according to Weiss (**8**), artistic speaking voices often show those five to six changes of pitch and loudness in a second which form the vibrato.

It is my opinion that the main difference between singing and speaking is psychological. According to Charles Buehler (**3**), language always addresses somebody (appeal), is emotional expression and representation in a more or less logical form. In singing, the emotional expression is overwhelming as compared with appeal and logical representation. In a play, for instance, the scenery, the costumes, the gestures and, first of all, the spoken words are all means of representation, and the audience is interested in all of these effects. On the other hand, one may listen to a song or to a whole opera without ever looking at the stage. One may fully enjoy a musical work without understanding a word of the language in which it is sung.

All these facts seem to indicate that physiologically there are no fundamental differences between speaking and singing. This statement is important for the topic of this paper, because as we proceed it will therefore not be necessary to refer to speaking and singing separately.

The physiological viewpoint has taught us that voice and articulation are so intimately joined that no voice education or correction can take place without giving attention to articulation. Of course, this splitting of one function into two parts, that is, dividing the united function of talking and singing into articulation and voice, is already to a certain extent a violation of the facts. If one understands this division as purely theoretical for the purpose of explaining (in the same way that the teacher of botany divides flowers into parts), the whole question contained in the title of this paper could never have been raised. In other words, physiology teaches that whoever wants to work therapeutically on a voice cannot avoid working also on articulation and vice versa.

If we now turn to the subject of pathology, it will only reinforce the conclusion just drawn. A few examples will suffice to prove this statement. There are singers whose voices lack the quality called *voix mixte*, because what is called head resonance is wanting. All attempts at producing *voix mixte* in the way of voice education are doomed to fail in those cases to which I refer because of a peculiar speech impediment, namely, the functional form of hyporhinolalia, wrongly called 'rhinolalia clausa.' This form is due to hyperfunction of the soft palate and most probably of some pharyngeal muscles. The failure of the soft palate consists of a continuous rising of this organ during speech (and singing), thus closing the entrance into the nasopharynx. Therefore, the nose sounds cannot be formed, or, if the palate rises too fast though not continuously, the nose sounds will be of too short duration. It has been proven that the vowels adjacent to the nose sounds participate slightly in the peculiar sound characteristic for nose sounds under normal physiologic conditions, Thus, also, these adjacent vowels will be affected. Only the treatment of the function of the soft palate can help to produce normal resonance.

People suffering from an anatomic or functional paralysis or paresis of the soft palate have the peculiar speech called hyperrhinolalia (wrongly called rhinolalia aperta). The trouble will affect speaking as well as singing. Yet in a very high voice hyperrhinolalia may not be as conspicuous as in a lower one, as pointed out by Jellinek (**6**). We do not know the reason why our ears do not per-

ceive hyperrhinolalia in a high pitch. It may happen that a voice educator will attempt to develop a voice exhibiting hyperrhinolalia to such a high pitch that muscles cannot produce for any length of time without severe damage to the musculature. The speech pathologist who has studied the nature and the signs and symptoms of hyperrhinolalia is aware of the acoustic disappearance of the peculiar nasality in a high pitch and will not fall prey to the opinion that the high range is the natural one in such a case.

Pathological and therapeutic speech and voice problems are most intimately joined in most of the spastic patients. These cases show spastic, paralytic, and athetoid signs. Almost without exception, articulation and voice are involved. The speech therapist will therefore fail, at least partly, if he does not understand the physiology, pathology, and therapy of voice. In many of these cases articulation can only be improved after the voice has been freed from 'spasticity' to the maximal extent possible.

The last example of a speech disorder to be presented in support of this approach is stuttering. It is well known that most stutterers have no difficulties in singing. That is the reason why some therapists have recommended singing as a remedy for the speech impediment. He who does not understand that the difference between singing and speaking is not so much physiological as psychological in nature may easily come to a wrong conclusion about the causes of stuttering. He may—and some therapists actually have—even come to the conclusion that the patient stutters because he does not use, for instance, flank breathing in speaking or that his speaking lacks rhythm while rhythm is present in singing and that this rhythm prevents stuttering. From there on the whole pathology of stuttering may be misunderstood, and this misunderstanding may prevent the majority of sufferers from being cured. Then there is only one step to the detrimental opinion maintained by some therapists that stuttering, as a rule, is incurable.

If there were no other argument to support the affirmative answer to the question posed as the title of this article, the last tragic possibility would be sufficient reason to prove the necessity for experts specializing in one aspect or the other to be thoroughly trained in both.

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A Study of Certain Factors Presumed to be Associated with Reading and Speech Difficulties

A. Sterl Artley*

IN discussing the question of speech and related reading difficulties, one is confronted with two aspects of the problem that need to be differentiated. The first relates to the matter of a limited background for speech growing out of an absence of meaningful experiences, real or vicarious. Since reading is a process of reconstructing facts behind the visual symbols, any limitation in experience, with its concomitant limitation in word meaning and speech fluency, would peradventure have a bearing upon reading ability. The second concerns itself with a more limited aspect of the problem, that of the relation between the inability to produce the proper speech sound itself and reading ability. It is the intent of this article to deal with the second aspect of the problem. We shall survey the literature in an attempt to appraise the relationship between speech and reading defects and to account for whatever correlation appears to exist.

Incidence of Speech Defects and Related Difficulties in Reading

At the outset, it would be presumed that some degree of relationship should exist between difficulties in speech and difficulties in reading. Figuratively stated, speaking and reading comprise two sides of a square known as communication or language, the other two sides being writing and listening. Being inextricably associated, any limitation or facility in one is reflected to some degree in the others. However, it should be pointed out that researchers in the field of reading have long ago given up looking for a single factor that would account for reading handicaps. On the contrary, reading difficulties as well as difficulties in arithmetic, spelling, or any other area, are usually the result of an interplay among several factors. Such factors may be speech defects, visual or auditory defects, lack of motivation, poor instructional procedures, improper instructional materials, limitations in intelligence, and the like.

These factors have a peculiar way of counterbalancing each other, so that an inadequacy or limitation in one of them may be offset by certain strengths in others. These counterbalancing factors tend to neutralize the effect of the one factor under consideration. Figuratively speaking, it is as though many hands are pushing on a large rubber play ball. Its direction is determined by the pressures and combinations of pressures that may be exerted in one or opposing directions. It does not necessarily go in the direction the strong boy is pushing. The point is that regardless of the factor being studied in its causal relation to reading defects, it must be considered in its relation to many other factors which may render it par-

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ticularly effective on the one extreme and impotent on the other.

A study of research reports indicates absence of complete agreement as to the relationship that exists between reading defects and speech defects. Monroe (**14**, 91), in an extensive study reported in the monograph, *Children Who Cannot Read*, found speech peculiarities relatively frequent among inefficient readers. Among 415 reading defectives, she found 9% who stuttered and 18% with various articulatory defects, including infantile speech patterns, mispronunciation, lisping, etc., making a total of 27%. These figures are to be compared with the incidence of speech defects in a control group of 101 non-defective readers in which there were 1% who stuttered and 7% with articulatory defects, a total of 8%. Her measure of reading achievement was a composite grade score derived from both oral and silent reading tests.

Bennett (**1**) compared 50 pairs of children in grades two through four. The groups were equated as to sex, grade, class grouping, etc. The variable factor was that of reading ability. Bennett reports that the one factor which stood out in the physical area as most clearly associated with reading retardation was a history of speech defects. Nine of the parents of the poor readers reported having had problems connected with speech, while of the children themselves, 13 reported such difficulties. A total of 19 children in this group had experienced either personal or parental contact with speech problems. Among the controls, no parent reported having had a speech problem, although six of the children believed that they themselves had stuttered at one time. However, at the time of the investigation, no child in either group appeared to be an obvious and chronic stutterer.

Several rather obvious limitations to Bennett's study tend to reduce its value in determining the relationship between speech defects and reading ability. In the first place, while the author refers to 'speech defects' he actually considers only stuttering. No examination was made of other types of speech defects which are even more common than stuttering, and which are shown by other studies to be associated in varying degrees with reading disabilities. In the second place, information with regard to the presence of the defect was secured from what the parents and children remembered of the condition, since no child appeared to be stuttering at the time of the investigation. Hence, though this study is widely quoted, its conclusions need to be considered with some reservations.

Jackson (**12**), making a study of the psychological, social, and environmental differences between advanced and retarded readers, compared approximately 300 advanced readers with a like number of retarded readers in grades two through four in some 20 different respects, one of which was speech. He found 10% of the accelerated readers and 23% of the retarded readers with speech defects and added that 'a critical ratio (between the means) of 3.66 designates this frequency to be above the expected rate due to chance.' He adds, 'Since the tests administered measured the rate and comprehension of silent reading and not oral ability, it is distinctly noteworthy that reading retardation may occur on the basis of a speech defect.' The report gives no information as to what constituted a speech defective, nor by whom the speech examination was given.

Robinson (**18**, 227), in a recent study, made a very comprehensive and thorough clinical analysis of 30 severely retarded readers. The speech examination was made by a speech therapist. She reports that dyslalia was found in 20% of the cases studied. This finding Robinson reports as having the possibility of significance, since dyslalia is believed to be present in only

about 2% of the general school population. One of her cases stuttered consistently, while in another case stuttering appeared only when the child became excited.

Bond (**5**), in a widely quoted study of the auditory and speech characteristics of poor readers, compared 64 poor readers with 64 good readers in grades two and three. No significant differences were shown in his data between good and poor *silent* readers in the incidence of speech defects. However, when *oral* reading ability was taken into account, a variation with respect to the incidence of speech defects was obtained. Of those children who were retarded in oral reading but were good silent readers, 35% had speech defects, while the children who were retarded in silent reading but were good oral readers had no speech defects. Bond points out that the number of cases is probably too small to base a valid judgment upon, yet the 'difference is so marked that it is questionable whether it can be ascribed to chance.'

Moss (**16**) studied 983 second grade pupils in the public schools of Birmingham, Alabama, in order to determine the influence of speech defects on reading achievement. Thirty-six matched pairs of children were used in the study. One child of each pair had a speech defect; the other was a normal speaker. Reading ability was checked by means of the Gray Standardized Oral Reading Test. In both speed of reading and freedom from reading errors, the normal speakers surpassed the defective speakers. Moss found that the average child with a speech defect required 8.7 seconds longer to read a given selection, and that he made 1.8 more errors to a given page than did the average child with normal speech.

It is interesting to compare the approach to the study of the problem made by Moss with that made by Bond in the preceding investigation. Whereas Moss studied matched groups of normal and defective speakers to determine the extent of associated reading deficiency, Bond studied matched groups of normal and retarded readers to determine the extent of associated speech impairment. Both studies arrive at a similar conclusion, with oral reading considered in each case.

Somewhat at variance with the studies quoted is that of Moore (**15**), who found that 236 ninth grade children having speech disorders of various kinds ranked above the expected grade median on the Iowa Silent Reading Test, and as a group made a grade median score comparable to that of the four preceding ninth grade classes. Hence, in the light of this study, we are led to believe that speech defectives as a group show no particular deficiency in silent reading ability. Why the survey of Moore should differ in its results from other studies mentioned where the conditions are somewhat similar is not indicated. The need for similar investigations under more rigidly controlled conditions would seem to be apparent.

The conclusions of the majority of studies mentioned, along with the writings of Betts (**3**), Witty and Kopel (**22**, 215-217), and others, lead one to the generalization that speech and reading defects are to a substantial degree associated. Particularly is this true where oral reading is involved. There now remains the problem of attempting to account for this relationship as a basis for prevention of one or the other type of deviation and as a basis for remedial instruction.

Speech Defects as Causes of Reading Defects

As has already been stated, the reciprocal relation among the many factors that may exist as causes for reading difficulties make it extremely difficult, if not impossible, to isolate a *single* cause for a reading handicap. Furthermore, the mere presence of an anomaly can not justify the conclusion

that it is the cause of a reading defect. Robinson (**18**, 214) makes this observation from a study of her data when she shows that factors that at first *appeared* to be causal in specific cases of reading retardation were not considered causal in the final analysis, since the removal of the particular factor through remedial procedures yielded no improvement in the ability to read. Hence, we are able to speak only in general terms concerning speech defects as causes of reading handicaps.

Bond (**4**) has shown that the presence of speech defects is more pronounced when reading is appraised by the oral method than when it is measured by the traditional silent reading test. Though he questions the validity of this conclusion due to the small number of cases involved in his study, it seems reasonable from several different angles. First, because of the desire of the reader to present himself in as strong a light as possible before his listeners, there is the tendency for the reader to become unduly concerned over his speech, and, hence, to fail to grasp the meaning of what he is reading. Concern with the mechanics of pronunciation occludes comprehension of the author's ideas.

In the second place, especially where stuttering is involved, the blocks slow down the rate of reading in a material way. We know, too, that the slow reader is usually the poor reader, since preoccupation with symbols, short eye-voice span, improper or absence of phrasing and the like tend to make one forget the purposes for which he is reading, as well as to interrupt the thought process which is basic to effective reading.

In the third place, articulatory defects result in errors of pronunciation and enunciation which may result in a distorted idea of what has been read. When one pronounces *red* as *wed*, or *letter* as *ledder* and interprets it as *ladder*, it readily can be seen why the speech defective may sometimes fail to measure up when oral reading comprehension is checked.

Finally, one who has a speech defect will undoubtedly not secure full enjoyment from reading aloud. With the difficulty that the teacher and the children have in understanding him, and because of the humiliation and embarrassment that he may encounter as a result of his inarticulate, blocked, or peculiar speech in an audience situation, the child simply shuns reading and fails to get the practice necessary in making him an effective oral reader. Furthermore, through the process of generalization, the negative conditioning to oral reading spreads to silent reading, or reading in general. As a result, the child comes to dislike all activities associated with reading and books, even to dislike the teacher of reading. Needless to say, his progress in reading, both oral and silent, will be limited.

Hildreth (**10**) mentions a number of types of language difficulties that retard reading. She lists inadequate or immature motor coordination in articulation; indistinct, inaccurate articulation; inhibited emotional conflicts due to speech defects that interfere with articulation in oral reading, as well as with comprehension and interpretation of the printed page; poor auditory discrimination of speech sounds; sensory and motor aphasia; stuttering; and bilingual background. Regardless of the nature of the language difficulty or the form it takes, if we are considering the *defect only* as a factor, it is believed that its relation to reading can be explained by the resulting aversion to reading, and by the resulting lack of practice. The fact that there are many speech defectives who read well, particularly in a silent situation, only indicates the presence of certain counterbalancing factors. For example, there might be an understanding teacher who minimizes oral reading, but who stresses silent reading. There might be an intense interest in

reading on the part of the child brought about by the desire for entertainment or for additional knowledge. As Bennett states, 'The child with a persistent speech difficulty is hardly ever a good oral reader. On the other hand, presence of such a difficulty need not make him a poor silent reader.'

Gates (**6**, 398) makes a conjecture that seems to offer an additional explanation as to the way in which speech defects may result in poor reading even though it may be of the silent type. It is his impression that speech defects may result in inefficient silent reading habits if the subject is required to do much oral reading. If, because of large amounts of oral work, the habit of reading with full and exact inner speech is developed, the difficulties of articulation will be fastened upon silent reading. Said another way, the reader in the act of silent reading interprets, or we should say, misinterprets, because his thinking is based upon the word as he calls it subvocally, rather than upon the word as it functions symbolically. This is an interesting hypothesis that should be appraised by means of appropriate research.

Reading Defects as Causes of Speech Defects

Little research exists to explain this apparent cart-before-the-horse relationship. Yet there is no good reason for assuming that reading defects resulting in nervous tensions, fears, anxieties, and the like, should not intensify a nervous or insecure condition that already exists or that is predisposed to exist. Our present knowledge of stuttering leads us to believe that it is largely due to an emotional condition, brought about by any number of situations, among which may be failure in school or lack of achievement in reading or arithmetic.

Betts (**3**, 319) recounts the story of a boy who had a slight tendency to stutter. This condition was intensified, however, by the fact that he was required to memorize poetry and recite it in a mechanical recitation before jeering listeners. What had been a mild tendency to stutter became such a severe speech blockage that the services of a speech therapist were required. It may be presumed that this boy's unfortunate experiences could be duplicated in only too many situations.

There is the likelihood, also, that a lack of an effective method of attacking unfamiliar words may cause the reader to fear a word with which he does not have an immediate speaking acquaintance. This fear or uncertainty of the word symbol may be reflected in an emotional block and may possibly manifest itself in stuttering behavior. Hence, we may say that in these cases the reading defect is a causal factor in relation to the speech defect.

Reading and Speech Defects as the Result of a Common Factor

It would seem that situations could arise in which deficient reading and speaking appeared together, not in a causal relationship, but as the result of both arising out of a common background, or as the result of a condition that affected both speaking and reading in a similar manner. One such factor may be intelligence. According to Ingram (**11**, 21), 12 to 13% of mentally retarded children have speech defects, as compared to 2 or 3% found in the regular grade groups. Moreover, there exists a fairly marked tendency for reading test scores to agree with intelligence test results, depending, of course, on the nature of the intelligence test used. Strang[1] generalizes that this relation lies between .50 and .70. Though it is apparent that low intelligence does not necessarily have as its concomitant either defective speech or reading retardation, this common factor could help to account for some of the cases which we find in both speech and reading clinics.

[1] Strang, Ruth. Relationship between certain aspects of intelligence and certain aspects of reading. *Ed. and Psych. Measurement*, 1943, **3**, 355-359.

Reduced auditory acuity is another factor that has been considered as a common base for both reading and speech defects. Bond (**4**), in his study of the auditory and speech characteristics of poor readers, found a significant difference in hearing acuity favoring the good readers. Moreover, he found in comparing a group of children taught reading by a method emphasizing the phonetic approach with another group, taught by a visual or 'look-and-say' method, that 63% of the oral-phonetic group showed hearing losses of more than 15%, while among the visual group only 4% showed a similar loss. Thus it appears that reduced auditory acuity exists as a factor in poor reading ability in the degree to which instructional procedures which place a premium on the hearing of speech sounds are used. In contrast to the findings of this study are those of Wallin, White, and Poull, Warwick, Bachmann, and Jastak. These researchers consistently found that nonreaders exhibited no greater hearing loss than good readers. Witty and Kopel (**22**, 214) summarize their findings in the statement that 'Auditory factors appear related to reading disability only in individual cases of gross defect and under special (perhaps indefensible) pedagogical conditions of instruction.'

In a comprehensive and analytical study completed by Henry (**9**), slightly different light is thrown upon the problem of auditory acuity in its relation to reading defects. She considered hearing losses in terms of three types—low frequency, middle frequency, and high frequency. In comparing the reading achievement of children having hearing losses of each of the three different types, Henry found that the child with keen high frequency acuity had significantly greater chances of being a good reader than one who had poor acuity. On the middle frequencies, the mean difference was still in favor of the best readers, with the difference being reliable within the 5% limit, while on the low frequencies the difference in reading ability between those who had no hearing losses and those who had was negligible. However, the author cautions, 'Because there are some children with keen high tone hearing who fail to achieve in reading just as there are many with high tone loss who achieve average or above, the relation that has been found to exist between reading achievement and high tone loss should be considered a phenomenon applicable to group rather than individual prognosis.'

With regard to the reason for the relation between high frequency hearing loss and reading achievement, Henry hypothesizes as follows: 'Consonant sounds are created by relatively higher frequency patterns than are vowel sounds; they are relatively softer and are dissipated more quickly. In addition, they carry relatively more of the intelligibility of speech, and in spoken English, they occur more frequently than vowels. If this hypothesis is correct, then the values of the high frequency sounds for vocabulary development and reading achievement are evident.' In the light of this study, one might append to Witty and Kopel's summary mentioned above the generalization that auditory factors appear related to reading disability in terms of the particular area on the audiogram wherein the loss occurs.

What about speaking? What part does auditory acuity play in accounting for speech defects? Hall (**7**), in a very well controlled study of the auditory factors prevailing in articulatory speech defects, worked with two groups of students—college freshmen and elementary grade children. Speech defectives were paired for comparative purposes with normal speech cases. In neither group could Hall find a significant difference between the speech defectives and normal speakers in auditory acuity. She writes, 'It would seem evident . . . that deficiency

in auditory acuity . . . is not a differentiating factor between normal and defective speakers, and, consequently, should be abandoned as a generalized explanation of functional articulatory defects.' In regard to this conclusion, she cautions, 'The writer does not mean to deny the well-established facts with regard to the serious effects of hearing loss upon the development of good articulation. However, these facts do not justify a reverse type of reasoning to the effect that functional articulatory defects exist because of some obscure deficiency in auditory acuity.'

Mase (**13**) found that his data did not disprove the hypothesis that functional articulatory speech defectives hear as well as their matched controls. However, the difference between the two groups was disparate enough to cast some doubt upon the hypothesis and to 'permit surmise that further research might reveal a significant difference.' At any rate, within the limits of his study, Mase would agree with Hall's conclusion that reduced auditory acuity could hardly serve as a generalized explanation of speech defects.

Carhart (**5**) has discussed selected research which indicates that for the most part hearing losses fail to distinguish speech defectives from normal speakers. He says, 'The picture from the studies is inconclusive. However, it does not mean that hearing losses do not in specific cases affect speech adversely.'

These findings are borne out by the White House Conference statistics on causes of speech defects which show that less than 1% are due to impaired hearing. In a conclusion similar to the one made with regard to hearing acuity and reading, we might say that this factor appears related to speech handicaps only in individual cases of gross defect.

If, as has been indicated, auditory acuity is unrelated to reading disabilities, or at the most, related only when certain teaching procedures are used, and if we agree that it is related to speech defects only in specific cases, then we are forced to conclude that the factor of reduced auditory acuity can hardly account for speech and reading defects appearing concomitantly.

Another factor, auditory discrimination, or the ability to differentiate between similar sounds, has been discussed in the literature as relating to both reading defects and defects in articulation. Monroe (**14**, 91) opines that 'the child models his articulation to match the auditory pattern of a word as presented by another person. If auditory discrimination is poor, he may confuse similar words in both speech and reading without recognizing the error.' To determine the influence of poor auditory discrimination upon reading, she compared a group of 32 'non-readers' with a like number of unselected children. In each case, the subjects were asked to distinguish between 20 pairs of carefully articulated words, some pairs being alike, others different. She found a highly significant difference between the two groups in favor of the control group and concluded that 'lack of precise auditory discrimination was found to impede learning involving auditory impressions.' Furthermore, Bond (**4**) found the difference between his two groups in regard to auditory discrimination, though not highly significant, 'probably too large to be explained by chance.'

In looking at this factor in its relation to speech defects, Hall in her study found no significant difference between functional articulatory defectives and normal speakers in auditory discrimination. Mase arrived at the same conclusion in the study referred to above. Hence, we are forced to say on the basis of these studies that although the ability to discriminate between similar speech sounds may be related to reading ability, no such relation was found to exist with regard to speech defects. Consequently, audi-

tory discrimination can hardly be considered a common base for both types of defects.

Another auditory factor which possibly should be considered in its relation to speech and reading is auditory memory span, or the ability to retain sounds heard. Van Riper (**20**, 110), Berry and Eisenson (**2**, 274), and West, Kennedy and Carr (**21**, 162-164) refer to short auditory memory span as a possible etiological factor in speech defects, while Monroe (**14**, 107), Robinson (**18**, 145) and others refer to this factor in regard to reading.

Mase's (**13**) study of the auditory span involving the recall of digits used as subtests in Form L of the Revised Stanford-Binet intelligence test showed no significant difference in memory span between his experimental and control groups. In fact, he says, 'The speech defectives scored higher on the age level passed on the memory span test than did their controls, although the difference was slight.'

Hall (**7**), in both the college group and the elementary school group, found no difference of significance between functional speech defectives and normal speakers in ability to remember speech sounds. However, she found that memory span for speech sounds was significantly correlated with intelligence, and she hypothesizes that 'results found in the past on auditory memory span (i.e., positive correlation between auditory memory span and speech defects) were probably due to the differences in general intelligence in which auditory memory span is a factor, rather than to a specific disability in this trait.' If this is true, we would have at least one explanation for the fact that the incidence of speech defectives is greater in children of retarded mental development than among normal children. On the basis of these two well-controlled studies, it appears that short auditory memory span cannot be considered an etiological factor in accounting for speech defects.

In reading, Bond (**4**) found a significant difference between good and poor achievers in the factor under consideration. Moreover, the difference between the good and poor readers taught by the visual method was greater than the difference between the good and poor readers taught by the phonetic method. In other words, children with short auditory memory spans are at a disadvantage when visual rather than auditory techniques in word recognition are employed. This would be expected in the visual method of reading instruction studied by Bond, since it involved the 'look-and-say' procedure. By this method, premium is placed upon the child's ability to recall a word symbol he has been taught, rather than to analyze the word into its visual or auditory components and to work out its pronunciation according to learned generalizations or principals.

Saunders (**19**) places considerable stress upon memory for sounds. She feels that with a short auditory memory span, reading and spelling are particularly difficult for children. 'It may be pushing the case too far,' she says, 'to say that the short auditory span is responsible for many of the reading difficulties and for much of the poor spelling found among children. While it cannot be stated that all reading disabilities are allied with poor memory spans, yet it can be stated with certainty that all poor memory spans are allied with difficulties in reading and spelling.'

Robinson (**18**, 145) found among her severely retarded readers that those with short memory spans for sounds made less progress in reading reconditioning than others. Hence, in an indirect manner, the effect of this factor is recognized.

Rizzo (**17**) fails to attribute quite the potency to the memory span factor in its relation to reading retarda-

tion that Saunders does. He equated two groups of children in terms of reading ability. When memory span scores of the good and poor readers were compared, he found that although not one of the obtained differences was in itself large enough to be highly significant, 'the differences taken as a whole were larger than mere chance deviations.' From these representative studies, it appears that the memory span factor bears some relation to reading ability, though the findings are somewhat inconclusive as to its extent.

We are faced with data to indicate that though short auditory span may bear some relation to reading handicaps, the same conclusion cannot be drawn with regard to speech defects. Hence, we cannot say on the basis of these studies that reading defects and speech defects arise from short memory span as a common cause.

Factors other than those considered in this article may well have an etiological relationship to reading and speech problems. Such factors as bilingual background, motor incoordination, birth injuries, and neurological defects offer promise of explaining the appearance of the two defects concomitantly. Certainly the last word with regard to speech and reading defects has not been written. In the writer's opinion, further research will undoubtedly yield data to indicate common bases for both diagnosis and correction. Specifically, a few of the problems needing investigation are these:

1. To what extent are speech defects associated with deficiency in silent reading in contradistinction to oral reading?

2. Are certain types of speech defects more closely associated with deficiency in one type of reading (silent or oral) than with another? What factors would account for this differential relationship, if it were found to exist?

3. To what extent are deficiencies in the various components of reading ability associated with speech defects?

4. What is the likelihood that difficulties of articulation may affect silent reading?

Summary

1. There appears to be a relationship between speech difficulties and deficiencies in reading ability, though there is absence of agreement as to the extent of this relationship.

2. There are some indications that this relationship exists even when reading ability is appraised by silent reading tests.

3. Counterbalancing factors tend to reduce or increase the potency of any particular factor that is being appraised for its relationship to either speech or reading defects.

4. Studies indicate that speech defects may be the cause of reading defects, the result of reading defects, or the two may exist side-by-side as a result of some common factor.

5. Where speech defects exist as a cause of oral reading defects, an explanation may be in the fact that (a) concern of the speaker over his defective speech may result in lack of attention to comprehension, (b) defective speech may interfere with rate of reading, and, hence, interrupt the smooth reception of ideas, (c) articulatory defects may result in errors of pronunciation and enunciation which would have an effect upon the quality of interpretation, and (d) dislike for oral reading may result in lack of practice, and, hence, in lack of proficiency.

6. Where speech defects exist as a cause of silent reading defects, an explanation may be found in the fact that negative conditioning to oral reading spreads to silent reading, resulting in lack of practice, and, hence, lack of proficiency.

7. Where reading defects exist as a cause of speech defects, an explanation may lie in the fact that reading

defects may result in fears, tensions, and various types of nervous behavior that may impair normal speech.

8. Mental retardation and other factors not considered in this summary of research may account for reading and speech defects existing concomitantly.

9. While factors such as reduced auditory acuity, lack of auditory discrimination, and relatively short auditory memory span may be related to reading retardation, they do not appear to be significantly related to speech defects.

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Audiometric Tests of Speech Defective College Students

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AUDIOMETRIC TESTS were given to all of the one hundred and eighteen women students enrolled in the Speech Clinic, Wellesley College, 1946-1947, in order to determine their auditory acuity.

Procedures

The following procedures for testing auditory acuity and for analysis of data were used by the examiners.

Testing

Each student was given an audiometric 'sweep check' test. Modifications of the 'sweep check' method were used to include slight variations from the norm. In case of a deviation from the ten decibel norm, a detailed reading for that frequency was made. Detailed audiometric tests were given when students exhibited wide variations from the norm.

A Maico D9 audiometer was used, and the standard Maico procedures for air conduction tests were used. The procedures included testing in a room insulated against excess noise and using a masking device of glass filled with absorbent cotton over the ear not being tested. Each student was seated opposite the machine, facing the examiner. The student was instructed to close her eyes during the test if she so desired and to indicate by raising the forefinger from the masking glass when she heard a sound, holding the finger up as long as she heard the sound and putting it down on the glass as soon as the sound ceased. Each student's hearing was tested once on each frequency from 64 to 11584 double vibrations. If there were any indication of uncertainty on the part of the student the frequency in question was tested two or three times.

The following tables show the order of frequencies to be tested as recommended by the Maico instructions for 'sweep check' test and detailed test procedures.

Detailed Test Procedure

Frequency	*Threshold of Pain at Decibel Listed*
1024	100
512	100
256	80
128	70
64	60
1024	100
2048	100
2896	100
4096	100
5792	80
8192	80
11584	70

Results of the 'sweep check' test were recorded on check lists. A check mark indicated normal reaction. Slight variations from the norm were indicated by the figure representing the amount of loss in decibels.

The right ear was tested first on

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each frequency, and the left ear was tested second on each frequency. The usual procedure of testing below the threshold of pain as indicated by the decibels listed above was followed. Results were recorded on Maico Audiogram Cards.

Analysis of Data

Analyses were made of the data obtained from the sweep check and the detailed tests.

For the sweep check tests, figures were computed for the number of students with normal hearing in both ears, for the number of students with normal hearing in the right ear and some deviation from the norm in the left ear, for the number of students with normal hearing in the left ear and some deviation in the right ear, and for the number of students with some deviations in both ears. The examiners then computed the total number of students with normal hearing in both ears at each frequency tested and the total number of students with deviation in one or both ears at each frequency tested.

Inasmuch as the number of students to whom the detailed tests were given was small, namely five, and the results so varied, it seemed inadvisable to make computations similar to those for the sweep check tests. However, copies of the audiograms have been included in tabular form in the section of this paper devoted to the results of the study.

TABLE 1. Student audiometric acuity.

Audiometric Findings	*Number of Students*
Normal both ears	59
Normal right ear (Some deviation L.E.)	16
Normal left ear (Some deviation R.E.)	17
Some deviation both ears	21
TOTAL	113

RESULTS

The results of the sweep check tests and of the detailed tests were compiled as follows:

Sweep Check Tests

The number of students with normal hearing in both ears and the number of students with a slight deviation in one or both ears were tabulated as shown in Table 1. The total number of students with normal hearing in both ears at each frequency and the total number of students with devia-

Frequency at 10 decibels	*Right Ear*	*Left Ear*
1024		
2048		
2896	The	The
4096	right	left
5792	ear	ear
8192	was	was
11584	tested	tested
1024	first	second
512	on	on
256	all	all
128	frequencies	frequencies
64 (at 15 decibels)		

SWEEP CHECK TEST PROCEDURE

TABLE 2. Student audiometric acuity at each frequency.

Frequency	Number of Students Normal (Both ears)	Deviation (One or both ears)	Specific Deviations*
1024	109	4	1 L15db, R 2 L, R15db 1 L, R20db
2048	110	3	1 L20db, R 2 L, R15db
2896	105	8	1 L15db, R 1 L25db, R 1 L30db, R 3 L, R15db 1 L, R25db 1 L20db, R20db
4096	110	3	1 L15db, R 1 L20db, R 1 L, R15db
5792	106	7	2 L15db, R 1 L25db, R 3 L, R15db 1 L15db, R15db
8192	112	1	1 L, R15db
11584	107	6	2 L20db, R 2 L, R15db 1 L15db, R15db 1 L25db, R30db
512	108	5	1 L15db, R 2 L20db, R 2 L, R15db
256	110	3	2 L, R15db 1 L15db, R20db
128	110	3	2 L, R15db 1 L20db, R15db
64	73	40	6 L20db, R 4 L25db, R 1 L30db, R 12 L, R20db 4 L, R25db 10 L20db, R20db 1 L20db, R25db 2 L25db, R25db

*L indicates left ear; R indicates right ear; db means loss in decibels. The number of students for each specific deviation is recorded. L or R listed without a loss in decibels means the ear is normal at 10db at all frequencies except 64 which is tested at 15db.

tion in one or both ears at each frequency were tabulated as shown in Table 2.

Detailed Tests

Audiograms of the five students for whom detailed tests were given were charted as shown under cases 1 to 5. Where no loss is indicated on these charts the test was carried to the threshold of pain. An extension of the test at this point would have necessitated crossing the threshold of pain. (See *Detailed Test Procedure.*)

CASE 1

Frequency	Loss in db Right Ear	Left Ear
64	20	15
128	5	0
256	15	5
512	15	0
1024	–5	5
2048	5	0
2896	40	15
4096	40	45
5792	30	45
8192	–5	20
11584	–5	20

CASE 2

Frequency	Loss in db Right Ear	Left Ear
64	30	60
128	20	50
256	20	50
512	15	50
1024	25	60
2048	20	65
2896	5	55
4096	10	55
5792	10	50
8192	–10	25
11584	–5	40

CONCLUSIONS

The following conclusions were drawn from Table 1:

1. 52% of the students had normal hearing in both ears.

2. 14% had normal hearing in the

right ear with some deviation in the left ear.

3. 15% had normal hearing in the left ear with some deviation in the right ear.

4. 19% had some deviation from the norm in both ears.

The following conclusions were drawn from Table 2 concerning student audiometric acuity at each frequency:

1. The rank order of frequencies, with respect to the number of students with normal hearing in both ears was: 8192; 128, 256, 4096, 2048;[1] 1024; 512; 11584; 5792; 2896; 64.

CASE 3

Frequency	*Loss in db* *Right Ear*	*Left Ear*
64	15	—
128	0	55
256	–5	55
512	–5	60
1024	–5	60
2048	5	70
2896	5	80
4096	–5	60
5792	10	65
8192	0	50
11584	–5	40

2. The frequencies are ranked as follows wtih respect to the number of students showing deviations in one or both ears: 64; 2896; 5792; 11584; 512; 1024; 128, 256, 4096, 2048; 8192.

3. The frequencies are ranked as follows with respect to the number of students presenting various specific deviations: 64; 2896; 11584; 5792; 512, 4096, 1024; 128, 256, 2048; 8192.

It should be noted that these conclusions were based upon sweep check tests at the 10 db norm at each frequency except 64. If a norm of 15 db, as used by Dedomenico (3), or a norm of 20 db, as suggested by Osborn (4),

[1]Frequencies separated by commas belong to the same rank; i.e., frequencies 128, 256, 4096 and 2048 were second in the rank order.

CASE 4

Frequency	*Loss in db* *Right Ear*	*Left Ear*
64	15	0
128	0	0
256	–10	–5
512	–10	–10
1024	–5	0
2048	85	80
2896	—	100
4096	—	100
5792	—	—
8192	—	—
11584	—	—

had been used, all of the students tested would have been normal at the following frequencies: 128, 256, 512, 1024, 2048, 8192, 4096. In either case, the frequencies would have been ranked as follows with respect to the number of students showing various specific deviations: 64, 2896, 5792 and 11584. From inspection it may be seen that these four frequencies are the same as those ranked highest in the conclusions based on Table 2.

From the charted tables of the detailed tests, it may be concluded that, of the five students tested by this procedure, three had subnormal hearing in both ears, one had normal hearing in the left ear and subnormal hearing in the right ear, and one had normal hearing in the right ear and subnormal hearing in the left ear.

CASE 5

Frequency	*Loss in db* *Right Ear*	*Left Ear*
64	50	15
128	40	0
256	40	10
512	35	0
1024	40	–5
2048	25	5
2896	35	0
4096	45	–5
5792	55	–10
8192	30	–10
11584	35	–5

It may also be noted that in Case 1 the most significant frequencies in which loss occurred in both ears were found at 2896, 4096, and 5792, and that Case 4 was an example of severe loss in both ears in the high frequencies—2048 and above. Cases 2, 3, and 5 showed relatively flat curves of hearing loss in one ear.

Conclusions concerning the total number of students tested on both the sweep check and the detailed tests were as follows:

1. 50% of the students were found to have normal hearing in both ears.

2. 14% were normal in the right ear and had some deviation in the left ear.

3. 14% were normal in the left ear and had some deviation in the right ear.

4. 18% had some deviation in both ears.

5. 4% were subnormal in one or both ears.

If 20 db had been used as the norm, the figures presented in the paragraph above would have been changed to read as follows:

1. 81.4% had normal hearing in both ears.

2. 14.4% showed some deviation in one or both ears.

3. 4.2% had subnormal hearing in one of both ears.

Discussion

Two general conclusions which may be drawn from these data seem significant to the writers. The fact that the majority of students in the Wellesley College Speech Clinic have hearing within normal limits is a good prognostic sign for corrective speech procedures. The fact that some students in the Wellesley College Speech Clinic have a degree of hearing loss indicates the advisability of a hearing conservation program including routine audiometric tests as well as suitable medical and educational follow-up, for both those students for whom such a program is an immediate necessary and those for whom further retesting seems advisable.

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Parent Participation in Teaching Speech to the Deaf Child

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A GROWING recognition of the value of the education of parents of pre-school deaf children has brought a problem of significance to the attention of people interested in the best for the deaf child. This problem revolves about parent participation in teaching speech to the child of nursery school or pre-school age.

The degree to which the parent has participated appears to have been based on the teacher's idea of what parents *should* do. Historically, the burden of meeting the educational needs of children has been placed on the specially-trained individual, namely, the teacher. This training has been, and to some degree is still, relegated to a special environment, the classroom. The passive role of the parent may have been rationalized on the basis of systematic, more efficient, accepted methods of teaching by the teacher.

With added sophistication regarding the importance of parent-child relationships, especially in the case of the handicapped child, teachers have begun to assign to parents a more active role in the total development of their young deaf children. Teachers have encouraged parents' auxiliaries, parent-teacher associations, and special visiting days to observe demonstrations. Parents have been encouraged to observe children in free play and in the more specific training situations. They have observed the ways and means employed by the teacher in teaching sense training, lip reading, auditory training and speech. They have observed the children during rest periods and while eating.

The class in psychology leads the parent to understand the need for removing restrictions and limitations that are most frqeuently a result of parental attitudes. The class in speech and language promotes the application of such ideas in teaching the young deaf child.

The parent has been permitted and encouraged to participate in the teaching of all of these activities—with an outstanding exception—that of actually *teaching speech* to the little deaf child.

Is there anything about the teaching of speech to these young deaf children that should justify this exception? Or, is there anything about the parent that would justify it? Have teachers restricted speech teaching to their own highly trained group to such a degree that parents have not been given an opportunity to do all they may be able to do in that area, as well as in others?

It might be well, at this point, to consider the factors basic to successful speech teaching. The teaching of speech, as in the case of lip reading and language, involves imagination, ingenuity, an approach that takes into consideration the fundamental laws of child development, and an emphasis on *who* does it. Techniques in speech training are only as effective as the personality of the persons who apply them.

It would seem, therefore, that the first requirement that the parent and the teacher would have to meet would be the personality factor. Is the teacher

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relaxed, accepting, permissive and confident? Is the parent relaxed, accepting, permissive and confident? If any negative factors are present, what are they, and how dangerous would they be to the child in any situation? Is anything being done to make full use of the personalities of the well-equipped parents, and what is being done for the parent who needs special help? Whether our teachers themselves are adequately prepared for the necessary personal adjustment in teaching is a subject of current debate.

On the basis of parents having taught speech, as well as lip reading and auditory training, and having done it confidently to the advantage of parent and child, it would appear to be the responsibility of every teacher of preschool deaf children to find out what each parent can do and to guide each in applying various ideas and techniques.

After one or two comprehensive interviews with the parent and an observation of the child in dynamic relation with the parent, the teacher can generally evaluate the parent-child relationship. This would depend on the extent of parent participation in the teaching of the child.

Since speech is what every parent of a deaf child wants for that child, tension, whenever it is present in the parent, tends to be emphasized in the speech teaching situation more than in other learning situations. Many parents are fearful of doing something 'wrong.' This reaction seems to be most prevalent among those parents who have had more contact with teachers and with speech teaching. However, if this unfortunate factor exists, since speech development is so relative to parent-child relationship, it has seemed advisable to permit those who are better able to resolve their own personal problems to participate in the actual teaching of speech. This selection is in the hands of the teacher.

In addition to the responsibility of selecting the parents who can participate in any capacity in speech training, there is also the responsibility of showing them what to do and how to do it in various situations. There is an added responsibility of building and maintaining confidence in the ability to do the job. The parent should be encouraged to take advantage of any learning situation to teach anything that can be taught, including speech. Here, the teacher has the opportunity of putting his or her own education to much greater use.

The removal of 'bogies' and mysteries that may have been built around speech training is imperative. In one center, where parents are permitted to participate to the fullest extent, it was interesting to note that the whole group had been teaching speech for two weeks before they realized that they were doing so. When one parent became aware of it, the immediate reaction of several was that of fear. Some appeared surprised and somewhat pleased. The fear was based on what had been heard or read. The parent had begun the practice teaching on the basis of speech being part of the total situation. Speech as a separate unit could have been easily lost in the midst of the total activity. Speech for the young deaf child is not an isolated subject, separate from lip reading, auditory training or language understanding. Nor is it to be thought of or practiced unrelated to the developmental growth of the child. Speech remains, by far, the slowest in development. Nevertheless, the rate of development, its quality and its use is relative to the attention given to all other areas and to its correlation with all other aspects of development and training.

We might assume, therefore, that much of the restriction placed on parent participation in speech training may be in our definition of speech, how we think of it and how we present it. As a part of the whole, it has been successfully taught by parents in conjunction with other activities, such as sense

training, lip reading, etc. It is possible for the teacher to show the parent how to incorporate speech training in the total teaching situation, through simple and clear explanations and demonstrations.

A complete teacher-training program is not absolutely necessary for these parents. They are not being trained for professional purposes, but as parents who are the most effective teachers in their children's lives for good or otherwise. A current successful program has been one of presenting an activity and discussing its value and purpose. Then the teacher would demonstrate its use with a few children, and this would be followed up by practice teaching for the parent. A discussion would follow regarding the way in which the particular activity might be applied in the home, down town, etc. Since the young deaf child should not be expected to spend long periods in specific training situations, the amount to be absorbed and done by the parent would not be beyond that of any lay person. It would be quite unreasonable to expect parents to step into a completely new situation revolving about a problem vital to them and to become immediately efficient. The child is guided in speech development, as in any other respect, a step at a time and at his own rate. The parent goes along with him.

Those parents who have not been suited to participation in this area or others would continue to observe. During this time, they would also continue to attend the class in psychology along with the whole group. Then, if individual counselling is considered necessary, that would be taken care of. And when these particular parents were ready to participate, they would assume an active role in the speech teaching situation.

The most advanced psychology endorses permissiveness, the removal of restrictions and pressures placed on children by adults and their own attitudes. Have we given thought to our own attitudes regarding the education of the deaf child? If we proceed to place unnecessary limitations on parents, are we not merely paying lip-service to psychology? Is our belief in parent education only superficial? Could it be possible that teachers limit themselves in their restriction of parent participation?

Greater scope for parent participation in all areas in the education of the young deaf child would permit the teacher to reach more deaf children. The children would have more time to spend in natural situations with hearing children and adults and less time in artificial situations. More active roles for parents of deaf children would place more emphasis on parent-child relationships and a personal responsibility of the parent for the child *as a whole*. Since parents tend to rely on the judgment and guidance of the trained teacher concerning their role in educating their children, it is highly improbable that they would question a particular restriction such as speech teaching. They may not realize that they could do more. If the deaf child is to have a still greater chance of developing better speech through broader, more active roles for the parents, the teacher would seem to be the logical one to remove barriers. It is urgently essential that we give more thought to what the parent *can* do.

In consideration of what has been done for deaf children through parent participation in every possible way, there would seem to be no valid justification for parents being restricted from teaching speech to their young deaf children.

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The Reliability and Validity of Monitored Connected Discourse as a Test of the Threshold of Intelligibility

George A. Falconer*

CURRENT articulation tests to determine the threshold of intelligibility, or 'threshold for speech,' employ lists of either nonsense syllables, numbers, words, or sentences. The thresholds of such tests are usually defined as the lowest intensity level at which the listener hears correctly 50 per cent of the test material. The lists are very often long and, consequently, time-consuming and fatiguing.

A quicker, although less objective, test uses a recorded sample of actual everyday connected discourse; and the listener determines for himself where his threshold of intelligibility is by varying the intensity of the speech until he can just hear and understand what is being said. Of course, the sample of speech used for such a test must be monitored; that is, its intensity level must be constant, except as it is varied by the listener.

The present paper is a study of the *reliability* with which normally hearing and hard of hearing individuals can select a threshold of intelligibility for connected discourse (subsequently referred to as TICD) by the method just outlined.

It was felt that by the self-selection technique a quick measure of the threshold of intelligibility might be obtained with connected discourse. Such a test would simulate everyday listening. It might be more interesting to the listener, because he himself would make the test. The listener in this test, varying the intensity himself, does not become concerned about not hearing test material, because he can restore intelligibility immediately by adjusting his attenuator. It was the observation of this emotional factor in routine clinical tests of the threshold for speech that brought to our minds the question of how well an individual might select his own threshold of intelligibility for speech.

I

The electro-acoustic apparatus used for the study can be described briefly as a turntable, an amplifier, attenuators, and a calibrated headphone.

The sample of connected discourse used throughout the experiment was a newscast transcribed from the radio networks. It was chosen because of its evenness of level, the natural conversational style of speaking, and the simplicity of language and subject matter.

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As a well standardized current test of the 'threshold for speech' with which to compare the test by connected discourse, we selected the recorded form of Auditory Test No. 9, consisting of 42 spondaic words.

A preliminary study was made on 6 normal and 41 hard of hearing subjects to explore the characteristics of the responses to the test and thereby to establish a procedure of study which would most directly examine the several questions involved.

The preliminary study revealed no evidence of learning by the listeners. Neither practice nor familiarity with the particular sample of speech seemed to influence the results. There was no significant upward or downward trend for the group. In planning the main experiment it was, therefore, considered unnecessary to include extended tests for each listener. It was learned, however, that the instructions to the subject are critical for the reliability of the test. A revised set of instructions, adopted midway through the preliminary experiment with 40 hard of hearing subjects, increased the reliability of the test significantly.

For the main experiment, 25 normal and 47 hard of hearing subjects were chosen. This represented 50 normal ears and 94 hard of hearing ears. The hard of hearing subjects were routine clinical patients who had come to the Hearing Clinic at Central Institute as fenestration patients, either for pre-operative diagnostic tests or post-operative evaluation tests.

The subject was seated in a comfortable chair in the sound chamber. The calibrated earphone was placed over his right ear, and the No. 9 test was administered to determine his threshold for speech. Then, an attenuator box was placed on his lap, and he was handed a card bearing typewritten instructions for the test with connected discourse. He was given three trials at selecting the lowest intensity level at which he could hear and understand everything the speaker was saying. This he did by adjusting the attenuator which he held on his lap. The dial reading which he reported on his attenuator for each setting was recorded. The time required for each setting was measured in seconds and also recorded.

The procedure was repeated for the subject's left ear. By this time he had become sophisticated enough to disregard the written instructions. If, however, there was any question about the interpretation of the instructions, he was asked to reread them. It was rarely necessary to make verbal elaborations. The No. 9 lists were varied from test to test, but the same recording of connected discourse was used repetitiously, since the preliminary experiment had shown that familiarity with the material had no apparent effect on the results. The order of the tests was as follows:

1. Auditory Test No. 9, right ear.
2. TICD Test, three settings, right ear.
3. Auditory Test No. 9, left ear.
4. TICD Test, three settings, left ear.
5. Retest No. 9, right ear (normals only).
6. Retest TICD, three settings, right ear.
7. Retest No. 9, left ear (normals only).
8. Retest TICD, three settings, left ear.

II

The results of the study were most pleasing; in fact, the experimenters were slightly amazed at the close relationship to the No. 9 test from the standpoint of range, reliability, standard error of measurement, and test-retest reliability. Quantitative comparisons of the two tests are shown in Table 1.

It is obvious from Table 1 that the two tests are very closely related and that the TICD compares very favorably with No. 9 with respect to both dispersion and reliability. The mean thresholds for the normal group lie within one db of each other. (The TICD averaged, of course, about one db above No. 9.) The score for each normal ear on TICD compares very favorably with the No. 9 score for the same ear. The differences, as might, be expected, ranged apparently at random about a central tendency. As a

TABLE 1. Quantitative comparisons of Auditory test No. 9 and TICD.

	No. 9	TICD.
Normal Threshold (N = 50)	22.46 ± 2.63 db.	23.23 ± 3.77 db.
Standard Error of Measurement, Normal	2.87 db.	2.4 db.
Standard Error of Measurement, Hard of Hearing (N = 94)	Data not available	1.95 db.
Test-retest Difference, Normal	2.08 db.	1.84 db.
Test-retest Difference, Hard of Hearing	Not done	1.98 db.
50 NORMALS—94 HARD OF HEARING		
Average range of TICD { 6 setting	5.0 db.	4.55 db.
Average range of TICD { 3 settings	2.82 db.	2.59 db.
Percentage of ears for which TICD, test, retest, or both, differed from No. 9 by more than +7 or −5 db	8%	36%
Percentage of ears for which TICD, both test *and* retest, differed from No. 9 by more than +7 or −5 db	0%	13%

matter of fact, the TICD agrees almost as well in all respects with No. 9 as it does with its own retest value.

For the hard of hearing the agreement between No. 9 and TICD scores is nearly, but not quite, as close. It seemed possible that the larger deviations might be systematically related to the nature of the hearing impairment of the particular ear. When the individual cases were examined, however, no relation was found to either the extent or the direction of the deviation of the TICD threshold from the No. 9 threshold. One of the two cases in which TICD lay farthest above the No. 9 score was diagnosed by an otologist as having conductive deafness. The other ear which deviated equally far in the same direction was diagnosed as having a mixed deafness with predominant nerve involvement. On the other hand, an ear in which the TICD threshold lay farthest below the No. 9 score had a mixed deafness with predominant nerve involvement, and the second extreme in the same direction had a pure conductive type of deafness. The total time required for the three settings that constitute a routine measurement of this threshold of intelligibility for connected discourse is about two minutes, as a rule, and rarely more than three minutes. The time is significantly less than the four or five minutes required for ordinary recorded articulation tests, such as the Western Electric 4-C, Tests No. 9 and 12, or a phonetically balanced word list.

It is of interest to add that the subjects responded very favorably to the TICD test. Many of them liked the idea of the subject testing himself and found it both interesting and stimulating.

III

The advantages claimed for this test, then, are:

1. Speed (about two minutes).
2. Interest for the listener and lack of mental fatigue.
3. High face validity. (It uses a sample of actual radio broadcast.)
4. Satisfactory reliability.
5. Negiligible learning effects.

The chief disadvantage of the test is the subjective nature of the endpoint. An occasional subject gives an erratic threshold.

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A Description of the Speech Clinic at the Minneapolis Veterans Hospital

Alice M. Welsh*

DURING WORLD WAR II, efforts were made to rehabilitate disabled men so that, if possible, they might remain in the military service. When that end was not achieved, the handicapped men were discharged to return to civilian life. In those instances where these men were incapable of returning to action or to limited service but were still not able to be sent home, they were discharged from Army and Navy hospitals directly to the care of the veterans hospitals. This meant that the government hospitals, many of which were already filled to capacity, assumed the responsibility of providing thousands of additional incapacitated veterans with the most complete rehabilitation possible. The Veterans Administration is accomplishing this task by utilizing the specialized skills from a large number of fields to assure the hospitalized veterans the medical attention which they need.

During the war the Army and Navy established speech clinics in aural, neurologic and psychiatric hospitals where the results of speech therapy demonstrated the substantial and pertinent need to continue this type of treatment in civilian life. This was especially true of the speech clinics in neurologic sections where numerous pathologies were aphasic in nature and necessitated extensive and highly specialized therapy. The clinical speech program proved its effectiveness in these Army and Navy centers. In fact, the speech program was so efficacious that the Veterans Administration has established speech clinics in some of the veterans hospitals where, in some instances, they are functioning under the supervision of university speech clinics.

The speech clinic at the Minneapolis Veterans Hospital was set up in October of 1945 as an experiment to determine whether or not there was need for a permanent speech clinic in this particular type of medical situation.[1] As a matter of fact, at that time, it seemed doubtful that there was a sufficient number of patients with speech problems to warrant setting up a permanent language retraining program. One reason for the doubt, at the particular time, was that a minimal number of young patients had been discharged from service hospitals to the Minneapolis Veterans Hospital, so that most of the hospitalized persons were considerably older than is desirable from a prognostic point of view. Moreover, the incidence of speech disorders involved in the path-

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[1]Dr. Hildred Schuell is now Director of the Speech Clinic, Veterans Administration Hospital, Fort Snelling, Minnesota. The major part of her work in the neurologic section of the hospital consists of testing and reeducating aphasic patients.

ologies present at that time was low.

A part time speech clinician, under the supervision of the University of Minnesota Speech Clinic, kept the clinic open three days a week for approximately a year and a half. The clinic was located in the neuropsychiatric section of the hospital, but every section of the hospital was free to refer patients to the clinic when a speech consultation was desired. The types of services provided by the clinic and the duties of the speech clinician were clearly defined to the hospital staff in terms of diagnoses, therapies, and prognoses. A descriptive outline of these services was presented to the medical staff of the hospital as follows:

Diagnostic Services

The speech clinician shall examine patients for:

A. Defects of an articulatory nature caused by maxillo-facial injuries characterized by sound omissions and including a study of the repaired structures and their usability for speech.

B. Defects of phonation resulting from injuries to the larynx or adjacent structures causing peculiar voice quality, characterized by nasalization, denasalization, too high or too low pitch, etc.

C. Linguistic disorders of an aphasic nature caused by brain damage manifested by disabilities in production, comprehension of oral and/or written speech, accompanied by a prognosis of the patient's ability to regain oral and/or written speech.

D. Loss of ability to comprehend and express language caused by hearing impairments and an analysis of the patient's need for lip reading as well as careful study of his speech production.

E. Functional disturbances of rhythm occuring in the absence of specific structural causes, including a thorough study of the preceding speech experiences of the patient, an analysis of recent climactic incidents and a study of the patient's attitudes towards communication through oral language.

F. Defects of speech of a dysarthric nature resulting from neuropathologies characterized by faulty articulation.

G. Defects in writing caused by paralysis, paresis, or a shift of handedness.

Therapeutic Services

The speech clinician shall treat and restore as nearly as possible language behavior normal to the patient's age; existing anatomical structures, intellectual, social, economic and personality status. These therapeutic services shall include:

A. Necessary procedures directed toward the development of accurate and smooth production of rhythmically connected speech without unnecessary and disturbing compensatory movements.

B. Techniques aimed at the acquisition of intelligible speech of a pleasant quality without peculiar muscular movements of a compensatory type.

C. The use of multiple techniques to restore communication to patients who have completely lost it, or whose speech is inadequate, unintelligible, or on an elementary level, and who are not functioning at maximum speech efficiency.

D. Teaching of lip reading; correction of sound substitutions and omissions using kinesthetic and visual stimulation and training in the use of any existing residue of hearing, as well as assistance in adjusting to hearing aids and their use in the production of more accurate speech.

E. Training in easy and efficient speech production as a communicative activity; psychotherapy directed toward a more objective speech attitude including a reevaluation of speech situations.

F. Therapeutic exercises aimed at the development of intelligible speech.

G. Writing exercises aimed at the acquisition of steady and legible handwriting.

Prognostic Services

The speech clinician shall report, after a reasonable amount of time has elapsed, a speech prognosis for each patient regarding the probable speech improvement which he should achieve, accompanied by an estimate of the amount of time that speech therapy will involve.

After the patient had been examined in the speech clinic, the diagnostic findings, therapeutic recommendations, and prognostic reports were made to the referring doctor. Then, if the speech examination indicated that language retraining was needed, the clinician awaited the physician's permission to begin therapy. Sometimes patients received their speech examinations in bed and, when they became ambulatory, speech rehabilitation was started in the clinic. Since most of the patients with speech problems were aphasic and hemiplegic, the patients were usually in wheel chairs during

the first few weeks of their speech work. Although this interfered with writing therapy for the hemiplegics, pictures, word cards, objects and other non-writing materials were utilized to evoke spoken language in the meantime.

The patients came to the clinic for half an hour, and sometimes an hour, twice a day as long as they were hospitalized. In addition to the speech therapy, most of them received physiotherapy or corrective physical therapy, or both, to help them to regain the use of their limbs and to learn to walk again. The patients were seen individually and in small groups, depending on the type of speech disorder involved. The speech status of the patients was reported to the medical staff from time to time and, periodically, formal demonstrations of diagnostic and therapeutic techniques were presented to the physicians, nurses, social workers, corrective physical therapists and physiotherapists and other related personnel. These demonstrations proved to be very valuable in orienting and coordinating the existing rehabilitative facilities within the hospital. The speech clinician, together wth the staff from the neurological and rehabilitative services, collaborated in evaluating the patients' general progress.

After speech therapy was well under way and when the patients were no longer receiving medication (their physical rehabilitation was complete enough by this time for discharge from the hospital, and they were showing signs of independence reinforced by an eagerness to go home), the patients who lived in the environs of the Twin Cities were placed in the Outpatient Clinic of the hospital. This was a very satisfactory arrangement in that the patients could live at home and return to the clinic for an hour or two a day for further training in speech.

The results of the therapy during the first year showed a definite and urgent need for a full time permanent speech clinic. More and more younger persons were being discharged to the Minneapolis Veterans Hospital. Many of these patients did have underlying speech pathologies (usually of a neurologic nature) requiring immediate attention, and a sufficient number of these cases warranted extensive and daily therapy. The steady and progressive improvement of the patients treated had been extremely gratifying to both the patients and their families. And, finally, the realization that speech therapy is a necessary and beneficial facet of the hospital rehabilitative composite was impressed on the medical personnel. Therefore, the scope and success of the temporary clinic had clearly demonstrated that a permanent speech clinic was essential in the Minneapolis Veterans Hospital if the patients were to receive the most complete rehabilitation possible.

It has been noted that the incidence of neuropathologic cases in middle-aged and senile persons in college speech clinics is low. One reason for this is that these neuropathologic cases are usually of such nature that they require hospitalization, especially when the pathologies are Parkinson's disease, multiple sclerosis, encephalitis, and comparable conditions. Furthermore, it has been only in the past few years that the medical profession, as well as the speech pathologists, have realized that speech disorders of a neurologic etiology could improve with speech therapy. More and more, physicians are using the services of speech clinicians, physiotherapists, physical therapists, social workers, psychologists, etc., to rehabilitate these persons. Inasmuch as neuropathologies of an aphasic, Parkinsonian, or multiple sclerotic character constitute a relatively new field to speech pathologists, the veterans hospital affords a rich opportunity to study and treat a large number of such cases. It may be that the resulting data can

be treated quantitatively as well as qualitatively and, therefore, be of possible scientific value.

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TELLING THE PATIENT THE TRUTH

To speak of telling the truth, the whole truth, and nothing but the truth to a patient is absurd. Like absurdity in mathematics, it is absurd simply because it is impossible. I must explain this statement, for all our habits of moralistic thought acquired in early years and derived from the theological and metaphysical traditions of our race interfere with understanding.

Therefore, consider the statement: 'This is a carcinoma;' assuming it to be as trustworthy a diagnosis as we ever reach. Now let us look at this statement from a biological standpoint. If you utter it to a patient, it is a stimulus applied to him. This stimulus will produce his response. Need I say that his response will not be chiefly that convenient and misleading metaphysical abstraction called cognition? On the contrary, how much he will understand is uncertain, but if he knows that carcinoma means cancer, it is quite certain that circulatory and respiratory changes and other very intricate changes in the nervous system will follow. He will experience some kind of fear and in most cases a feeling of concern for the economic interests of others. All these and many other elements make up the intricate response of the patient to the stimulus which you have applied by uttering the four words: 'This is a carcinoma.'

It is uncertain that you can by no possibility convey to the patient accurate information of this kind independently of the associated affective processes. I suggest, therefore, that if you recognize a duty of 'telling the truth to the patient,' you range yourself outside the class of biologists with lawyers and philosophers. The notion that the truth, the whole truth, and nothing but the truth can be conveyed to the patient is a good specimen of that class of fallacies called by Whitehead 'the fallacy of misplaced concreteness.' It results from neglecting factors that cannot be excluded from the concrete situation and that are of an order of magnitude and relevancy that make it imperative to consider them. Of course, another fallacy is also often involved, the belief that diagnosis and prognosis are more certain than they are. But that is another question.—*L. J. Henderson (1878-1942).*

The Practical Cogitator, selected and arranged by Charles P. Curtis, Jr. and Ferris Greenslet (Houghton-Mifflin, 1945), 262-263.

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News and Announcements

Miriam D. Pauls, Editor*

Miss Marie Wheatley, Assistant Supervisor in Curriculum, State Department of Education, Maryland, sent detailed information about the Maryland speech and hearing program. The State Department of Education, in cooperation with the Department of Health, is planning to make hearing conservation a functioning and vital part of the general health program in the Schools of Maryland. A comprehensive program has been set up, experimentally, in five of the Maryland counties. By the end of 1949 Maryland expects to have screening on a regular basis, at least in the elementary schools, and a hearing clinic in each of the twenty-three counties in Maryland at least three times a year, with monthly clinics in the larger counties. At present only three counties have an educational rehabilitation program in speech and lipreading. The major handicap in expanding the program is the lack of trained personnel. A Speech and Hearing Technical Advisory Committee has been appointed by the State School Health Council to insure that the best technical knowledge in audiology is available.

Al Tudyman, Director of Special Education, Oakland Public Schools, Oakland, California, writes as follows:

We have 11 2/5 full-time speech correctionists who are teaching speech correction on an itinerant basis. These teachers visited 69 schools in this system and worked with 2,458 pupils during the year 1947-48. There were 1,898 articulatory cases and 560 nervous disorders. In the nervous disorders 459 were boys, and in the articulatory category 1,155 were boys. In spite of the average pupil load of 216 these teachers were able to dismiss a total of 921 cases and improved 1,408 cases. The teachers on the average visited the same school twice a week with periods of about 20 minutes in length. Their average class size was about 5. On the average, each teacher visited 6 schools.

The above will indicate that there is a great demand for speech correction in our school system. The pupil loads are about twice as heavy as we would like them and this is to be corrected in the future.

Lester N. Myer, Chief, Special Education, Department of Public Instruction, Commonwealth of Pennsylvania, writes that throughout the state the interest in speech and hearing programs is great. It is felt that as personnel is available a number of communities will initiate further services. A summary of services currently available is as follows: speech correction classes are held in 25 cities with a total of 63 teachers; hearing handicapped classes are held in 3 major cities, employing 16 therapists; five colleges and universities offer full clinical services and are accredited for teacher training, while eight others have partial programs and do some clinical work. There are nine other agencies offering speech rehabilitation services, with most of these specializing in cerebral palsied and cleft palate speech. There are five hearing rehabilitation centers in addition to the five residential schools for the deaf.

The Vocational Rehabilitation Bureau and the Veterans Rehabilitation Bureau have a staff of individual teachers throughout the state giving service in the fields of lip reading and speech correction.

Dr. Gilbert Cottam, Superintendent of the South Dakota State Board of

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Health, outlines the state speech and hearing conservation program as it was submitted to the Children's Bureau in their five year plan:

Program is limited to Pennington, Meade and Lawrence counties, but service may be extended to other sections of the state at the discretion of the Director of the Crippled Children Division.

In general, the program includes the audiometric testing of all school children, through high school, and any pre-school children who may be referred by physicians, parents, or others. All children under twenty-one years of age are eligible. A continuous speech clinic will be held with classes of one to six children meeting for at least one hour each week. Correctible defects will be corrected, hearing aids will be furnished, and speech training will be given to those in need of such training in special classes set up for this purpose.

Classroom teachers will be instructed by the speech teacher and will be responsible for the continuing training of the child between visits of the speech teacher. The audiometric technician will make audiometric tests. The speech teacher and correctionist will evaluate the child's needs and will offer speech instruction both on an individual and a class basis. She will also instruct the classroom teachers in the proper procedures for the daily instruction of handicapped children in the classroom. The otolaryngologist will examine handicapped children, will make recommendations for treatment and furnish such treatment as may be authorized. Public health nurses will assist in case finding and follow-up. No special diagnostic or treatment facilities have been set up.

Dr. Renato Segre, the secretary of the newly established Argentine group, sends the following announcement:

It gives me pleasure to announce to you that in the month of June, 1948, there was formed in Buenos Aires, under the name The Argentine Society of Logopedics and Phonics, an association of practitioners of biologic phonetics, orthophony, phonics and, in general, of all problems connected with speech, voice, and hearing. Our purpose is to further the study and progress of the aforesaid matters and to extend bonds of friendship and understanding among our colleagues as well as, with the rest of the associations that concern themselves with these matters, to raise the cultural and technical level of our members, augmenting their dignity as members of a profession and of an association, and their ethical standing; and to unite into a common body the knowledge—medical, pedagogical, physical, musical, psychological, and so forth—that its different members may contribute.

The first Directive Commission has been constituted as follows: President, Dr. Eduardo Casteran; Vice-President, Mrs. Maria A. DePinto Kramer; Secretary, Dr. Renato Segre; Assistant Secretary, Mrs. Marta B. de Ardissone; Treasurer, Dr. Jaime del Sel; Non-executive members, Mrs. Concepcion D. P. de Trostbach and Miss Amalia Maza.

Mrs. Ruth Tyndall, coordinator, Division of Special Education, Department of Public Instruction, Delaware, writes as follows:

At the present time, we have one speech correctionist in the city of Wilmington, Mrs. Thelma Deitcher and one full-time correctionist for the State Division of Special Education, Mrs. Bernice Holtzinger. Mrs. Ruth R. Tyndall is holding classes in speech correction in two schools and is giving individual therapy to a few cases. In addition to this, Miss Marian Gilmore, speech therapist for the State Board of Health, is giving remedial intervention to children who are physically handicapped, mainly cerebral palsied cases.

We have inaugurated this year a new hearing program. We have a full-time audiometrician for the state, who is conducting hearing tests in the schools, and who is following a rigid program of follow-up for every child found to have a hearing loss, through the school nurses, visiting teachers, and the available hearing clinics. We have a part-time lip reading teacher in the southern part of the state, but most of our cases have no access to such instruction. Wilmington, which is an entity unto itself, has a full-time lip-reading teacher and a teacher of the deaf.

Our plans for the next biennium include three speech correctionists, who shall also be lip reading teachers, and a continuation of our present hearing program.

Esther Lipton, Director, Division of Special Education for Physically Handicapped Children, Department of Education, State of Maine, writes as follows:

Commissioner Ladd has referred to me for reply your letter requesting information about state, county and municipal programs in hearing and speech. We are enclosing for your study a copy of the Maine law which provides for such services. To date, however, very little has been accomplished in the direction of speech and hearing except to point out the great need for such services.

Dr. Howard Runion, Head of the Speech

Department of the University of Maine, has held a speech clinic during the summer session for a number of years. During the past two summers, through the cooperation of our Division of Special Education, he has been able to plan to have about a dozen youngsters with defective speech live on the campus while taking advantage of the speech clinic. He is planning to hold another such clinic this coming summer. Enclosed is an announcement.

Our Division of Special Education has initiated a very small-sized speech and hearing clinic in the City of Waterville, where a highly qualified instructor works with a few children on Saturdays. The City of South Portland is the only one in the State with a full-time lip-reading teacher. Their program is approved by this Division. The City of Portland has a lip-reading program of its own which has not yet been supervised by, or approved by, our Division of Special Education. They arrange to have a regular elementary teacher with some training in lip-reading teach in her own building. Her lip-reading class is included in the regular day's work, and I am told the children are given a mark for it, just as they are for mathematics or for some other subject.

In a few instances, in places scattered throughout the state, we have approved a course of lip-reading instruction for an individual child. The instruction again is given by an elementary classroom teacher who has had one summer session of study in lip-reading. At present, we are in the process of setting up standards for teachers of speech correction and speech-reading. Recommendations have been made that a supervisor of speech and hearing be added to the staff of the Division of Special Education on the state level.

Miss Caro Lane, Acting Supervisor, Health, Physical and Safety Education, Department of Education, State of Louisiana, replies:

We are delighted to tell you that two years ago we had only one college in the state in which there were speech correction services at the Louisiana State University. Today we have qualified Speech Commissions in each of our state teacher-training colleges, and each of these commissions is giving some service to those in the surrounding areas. At Southeastern College, Hammond, the college employs a speech clinician and in turn gives the surrounding parishes an opportunity to purchase speech correction services from the college. Mr. John E. Robinson is working two and a half days in one parish and one day each in two others on this service. One of these centers has a clinician in training who will be fulltime next year, so Mr. Robinson's services can be extended to another area. Two other parishes, Ascension and Webster, also have speech correction services for rural schools. We are planning to offer the services of trained clinicians in a number of two-week workshops planned for this summer in parishes where the interest is high.

Speech correction is recognized and given its prorated share of funds. We have a very fine cooperative program with the State Department of Health through its Crippled Children's Services for any child with a speech handicap to obtain diagnostic examination. We have just organized a State Committee of Speech and Hearing. I enclose a copy of the materials which were sent out prior to the first meeting. We shall be pleased to get any help from you from time to time which you can send us.

W. A. WinterStein, in charge of Special Education Division, Department of Public Instruction, State of Iowa, summarizes the Iowa program as follows:

In brief, it consists of encouraging every-pupil speech analyses in the schools of our state, of furnishing counselling for the setting up of necessary speech programs, of arranging for itinerant speech instruction in smaller schools and supervising and encouraging the development of the state-wide service in this area.

Michael F. Walsh, Director of Education, State of Rhode Island, reports that a committee is now at work on a complete development for improvement for the exceptional child.

Dr. Felix Trojan, Director of the Clinic for Speech and Voice Disorders, University Ear, Nose and Throat Clinic, Vienna, in response to our inquiry, writes that they have a regular out-patient clinic in speech problems. Dr. Trojan also lectures on phonetics at the university. He has written a book entitled *Der Ausdruck von Stimme und Sprache* (Expression of Speech and Voice) which was published this summer by W. Maudrich, Vienna. It contains a new theory on the relation between the emotional life and the physiologic means of phonic expressions. It has been found very useful with their patients.

Mrs. Gretchen M. Phair, Supervisor of Speech Correction for the State of Wisconsin writes:

Wisconsin has had a program in speech correction for well over twenty years. During the '47-48 school year there were 25 cities employing full-time speech correctionists, and there are 47 correctionists so employed. There are two rural programs in the state and three orthopedic schools where cerebral palsied children have speech help every day. Six thousand, eight hundred ninety-one children were given special speech help last year. There have been special summer programs for cleft palate children for the last five years and a speech training center for aphasic children the past two years. These programs are run under the joint sponsorship of the University of Wisconsin Speech Department, the Wisconsin Orthopedic Hospital, and the Bureau for Handicapped Children, which is part of the Department of Public Instruction.

Guy Berry, Supervisor, Special Education Services, Department of Education, State of Arkansas:

As you perhaps know, prior to last year very little attention had been given in this state to the problems of speech and hearing handicapped children. Last September, the Junior League of Little Rock organized the Junior League Speech Correction School and employed as director of the school, Miss Marguerite Schmelter, a graduate of the University of Wisconsin where she majored in speech pathology. She has done graduate work at Wisconsin and at Northwestern University. This speech school is open to anyone anywhere in the state, and hundreds of children coming from every section of the state have attended clinics in the school. More than 100 have been enrolled for special work. Little Rock and North Little Rock Public Schools are using the services offered by the speech school.

In cooperation with the State Department of Education, Miss Schmelter has met with several public school faculties and has held clinics in a number of public schools in different sections of the state.

This summer, the University of Arkansas is offering some courses in speech correction. The Department of Education will reimburse at least 40 public schools for sending some member of the faculty to the University to take the courses. Several public schools are ready now to employ full time speech correctionists.

Much interest has been aroused in the state, and I believe the next few years will see considerable progress in this area of education.

Joseph J. Endres, Chief, Bureau of Physically Handicapped Children, The University of the State of New York, writes:

This is in reply to your letter of March 31 addressed to Doctor Spaulding, Commissioner of Education, and to advise you in turn that the chief state program which is being carried on in this state concerning children with speech defects has to do with the basic repair of pathological disorders, such as cleft palate and hairlip including orthodontia and then subsequently plans for speech education for these children when the repair is completed. This program has been in operation in this state now for quite a number of years and functions pretty largely through the children's court precedure, a copy of which I am enclosing so that you will get a better idea of the details.

In addition to this program, of course, many communities in this state, particularly the cities, hire speech teachers to work with the children in the public schools. These programs, however, are not state aid in terms of their general teacher aid quota, and consequently we do not attempt, as a result, to keep an accurate account of all the places where this service is being given. The same general principle holds for the hearing defective children where itinerant lip-reading service is given.

We have, of course, for the defective hearing children our residential schools for the deaf, and, in addition, we have public school classes in all of our larger cities. Of course, these same communities usually afford itinerant lip-reading service for the lesser disability cases.

H. C. L. Bell of Goulburn, Australia, replied to our request for information about his activities that he is in private practice. He conducts an experimental speech clinic and carries on research particularly in the area of stammering.

Mrs. Annie Moolenaar-Bijl, Speech Clinic, Laryngology Department, Groningen University Hospital, Groningen, Holland, extends the enthusiatic cooperation of the Dutch Association of Speech Therapists (Vereningung voor Logopaedie en Phoniatrie). Their group is eager for the exchange of ideas and promises later material for the *Journal*.

Funds totaling $25,000, for production of an educational film on cerebral palsy, will be raised by the National Association of American Business Clubs within the next four months, F. H. Bachman, Champaign, Illinois, president of the organization, has announced. The American Business Clubs adopted cerebral palsy as a national project in 1947.

The film, which will be produced by the National Society for Crippled Children and Adults, will be available to all interested persons and groups. The National Society is the only national agency operating a program of treatment and rehabilitation of the country's one-half million cerebral palsied persons.

The American Business Clubs feel that a movie, made for popular distribution, is one of the most effective ways to tell the American public about this neglected and misunderstood handicapping condition. Each club will have a goal to meet, and each will devise its own methods of raising money. The total will be turned over to the National Society for making the film. W. Hal Bird, Enka, North Carolina, and Schaefer Kendrick, Greenville, South Carolina, are co-chairmen of the project.

Elinor Wray, who has been director of the Speech Therapy Training in New South Wales since 1938, writes as follows:

Speech therapy has been established in Sydney, N.S.W., since 1931. The first Speech Clinic was opened at the Royal Alexandra Hospital for Children, Camperdown, which is a teaching hospital of 500 beds.

This Clinic became a training school for speech therapists in 1938 up to the present time. This training course is under the administration of a Medical Committee.

Speech Therapy Clinics in the State of New South Wales functioning for whole or part time are: The Royal Alexandra Hospital for Children; The Dental Hospital for Sydney; St. Vincents General Hospital; Department of Education, N.S.W.; The N.S.W. Crippled Children's Society; The Far West Children Health Scheme, Manly; Two speech therapists are in private practice.

In the state of Victoria, Australia, there are whole or part-time Clinics at: The Children Hospital, Melbourne; Royal Melbourne Hospital; Alfred Hospital, Melbourne; Ballarat & District Base Hospital; Repatriation Out-Patients Clinic; Education Department, Melbourne.

In the state of Western Australia: Perth Children's Hospital and Fremantle Hospital.

In the state of Queensland: Teachers Training College Clinic; The Children's Hospital Clinic; and The Montrose Cripple School.

The therapists in Queenland are teachers and do a short course to enable them to recognize and treat simple speech disorders and to learn to cooperate with fully qualified speech therapists. The speech therapists in the other states are either English or Australian qualified.

The Fourth Annual Speech Correction Conference, sponsored by the University of Missouri Department of Speech in cooperation with other state agencies, was held in Columbia, Missouri, on Friday and Saturday, October 29 and 30. Guest lecturer was Dr. Grant Fairbanks of the University of Illinois. Dr. Charlotte Wells, Director of the University of Missouri Speech and Hearing Clinic, was in charge of the program.

The thirty-sixth meeting of the Acoustical Society of America was held in Cleveland, November 4, 5, and 6, 1948. Of particular interest to our field was the symposium on 'How We Hear, Medical and Physical Aspects.'

An educational series of 15-minute radio scrips, dramatizing public health problems, can be obtained from The Mutual Life Insurance Company of New York. The scripts will be released on a monthly basis through May and will be offered without charge as an educational service to teachers, librarians, club leaders, and radio stations.

Miss Gretta Baker, well-known script writer and former member of the faculty at New York University,

will write the series for The Mutual Life, under the guidance of the company's medical department. In discussing the new series, Miss Baker said: 'The scripts can be used on or off the air. They are simply written and easy to produce and make fascinating program material for club meetings, school assemblies, radio workshops, little theatres, and other community groups. Teachers of English, speech, dramatics, hygiene, and science will find the scripts especially helpful in classroom work.'

For free copies, write to the Public Relations Division, The Mutual Life Insurance Company of New York, 34 Nassau Street, New York 5, New York.

The American Hearing Society gave an informal reception in honor of Betty C. Wright on Tuesday, October 5, 1948, at the new quarters of the national organization, 817 14th Street, N.W., Washington, D. C. Miss Wright has been a member of the staff of the American Hearing Society for twenty-five years and has done yeoman service. Much of the prestige that that society holds can be attributed to her unselfish, intelligent guidance and excellent public relations. Miss Wright will remain at the national headquarters.

The American Technical Society has announced their 50th anniversary Book Manuscript Contest. The objective is as follows:

This contest is an expression of the American Technical Society's willingness to cooperate with the Commission on Life-Adjustment Education for Youth. The Committee on Important Continuing Activities of the Commission has recommended that the Commission 'influence textbook companies to put out text material which will facilitate life-adjustment education.' This contest is the American Technical Society's reply.

The Commission defines life-adjustment education as that 'which better equips all American youth to live democratically with satisfaction to themselves and profit to society as home members, workers and citizens.'

It is our belief that the lag in translating into action many of the concepts of education which the Commission encourages is partially due to the lack of proper instructional materials.

Therefore, the purpose of this contest is to encourage the preparation of text and reference material for students above the elementary school age. Such text and reference material should be of the type that will aid these youths in acquiring and developing skills, work habits, occupational information, and those attitudes that make the worker a more intelligent and productive participant in our economic, industrial, and social life.

There is $1750 to be awarded in cash prizes, in addition to royalties for the publication of the selected manuscripts. The closing date is December 31, 1949. Anyone interested in details should write Managing Editor, American Technical Society, Drexel Avenue at 58th Street, Chicago 37, Illinois.

The United States Senate has appointed a layman's committee on social security to study programs of public assistance. The committee is headed by Edward R. Stettinius who is also chief executive for the University of Virginia. The committee told the senate:

Today more than 1.1 million children under 18 years of age are receiving aid to dependent children through the State-Federal program because one or both of their parents are dead, absent from the home, or incapacitated. Many of these children will be seriously handicapped as adults because in childhood they are not receiving proper and sufficient food, clothing, medical attention, and the other bare necessities of life. The national interest requires that the Federal Government provided for dependent children at least on a par with its contributions toward the support of the needy aged and blind.

The committee told that old-age assistance and aid to the blind is in a favorite position when contrasted with aid to dependent children. In 1947, the Federal Government gave 53 per cent of its total assistant expenses for old-age; 51 per cent for aid to the blind; but only 39 per cent for aid to dependent children. To put it another way, the Federal Government contributed $19.05 a month per recipient of old-age assistance, as compared with $6.92 per person receiving aid to dependent children (including the children and one adult in each family). The Stettinius committee on social security recommended that aid to dependents be increased substantially. The Federal maximums should be $50 for each of the first two persons in a family and $15 for each additional person, the committee requested. The estimated additional annual cost to the Federal Government for the recommended liberalized provisions for aid to dependent children would range from a low of $135,000,000 to a high of $160,000,000.

The Cerebral Palsy Training Center in Billings, Montana held Open House on June 2, 1948, to acquaint the people of the community with the work and equipment of this new venture. Three institutions cooperate to make this Center possible. The Eastern Montana State Normal School furnishes the three rooms in which the Center is located. The Montana Chapter of the National Society for Crippled Children and Adults has furnished one teacher and will have another soon for the educational division of the work. Mrs. Ethel Cech, formerly with the Illinois Children's Hospital School of Chicago, is the educational director. The Montana State Board of Health furnishes the medical supervision in the services of the orthopedist, Dr. Walter Hagen, the physiotherapist, Miss Ruth Hansen, formerly with the Vineland Training School, and the speech correctionist, Mrs. Thora Baker. There are 33 children under treatment now, 16 of whom are entered in the special school.

Athetoids and spastics, with complications of hearing loss, imperfect vision, and aphasia comprise the patient load. The colorful, sunny rooms furnished with desks and chairs to fit the individual child, toys and muscles training equipment help to make school, a new experience in the lives of most of the children, a pleasure.

The first International Audiology Conference was held in Stockholm, September 6 and 7, 1948, on the invitation of Professor Gunnar Holmgren of Stockholm. Approximately 40 otolaryngologists and acoustic physicists interested in the subject of audiology attended and discussed the problems of hearing as they affect the world population. Professor Holmgren made a short address of welcome, noting that the majority of persons who had been invited to the meeting were in attendance, and mentioning also that there is a great need for expansion of the field of otology, in both its medical and non-medical aspects.

Papers were read and various discussions were conducted during the two days of the conference. Among those participating were: Dr. E. P. Fowler, Jr., of New York; Dr. Norton Canfield, of New Haven, Connecticut; Dr. J. M. Tato, of Buenos Aires; Dr. Renato Segre, of Buenos Aires; Professor Y. Muermann, of Helsinki, Finland; E. H. Meyer, of Vienna; and others. The importance of omitting the word *dumb* when referring to those born deaf was emphasized, as was the delineation between the deaf and the hard of hearing. The von Bekesy recording audiometer was demonstrated, along with the Fant speech audiometer and the new Maico, model E.

The possibility of standardizing syllables without dialect or language implications, to be used for international speech audiometry, was brought up and discussed, with the decision to consult a linguistic specialist to work on the problem as a member of the International Committee.

The conference ended with a banquet, and the meeting was adjourned with sincere appreciation to Professor Holmgren for his foresight in calling the group together.

PERSONALS

Dr. D. W. Morris, president-elect of the A.S.H.A., has accepted the presidency of the Southern Illinois University at Carbondale, Illinois. Dr. Morris had been a member of the Speech Department and Director of the speech clinic of Ohio State University.

Miss Laila Larsen has resigned as Director of the Minnesota Travelling Speech and Hearing Clinic in order to accept an appointment in the Speech Department of the University of Indiana. Miss Jane Gaff has been appointed Director of the Minnesota Clinic. Miss Sally Brown has also joined the staff of the Minnesota Travelling Clinic.

Two new speech correctionists have been appointed in the Evansville, Indiana Public Schools. They are Miss Josephine Atwood and Miss Marian Donewald. Miss Atwood has just completed her undergraduate work at Purdue. Miss Donewald is an experienced primary and orthopedic teacher who has since specialized in speech correction.

Dr. Marie K. Mason read a paper, 'The Visual Hearing Method of Teaching the Hearing Handicapped,' and showed her new films at the Speech Therapy Conference at the Royal Society of Medicine, London. The conference was September 20-25, 1948.

Alfredo Dub, Speech Therapist of the Uruguayan Faculty of Medicine and of the Uruguayan Ministry for Public Health, Montevideo, also attended the London speech conference. He gave a paper entitled 'Speech Therapists in South America.'

As of July 1, Dr. Jon Eisenson was appointed a Lecturer in the Department of Otolaryngology in the Medical School of Columbia University.

John J. Fitz-Gibbon, Fellow, American College of Dentists, and Honorary Fellow of the Association, died at Holyoke, Massachusetts, June 4, 1948. His wife, Amy Curtis Hamilton Fitz-Gibbon, and his two sons, Dr. John H. Fitz-Gibbon and Francis J. Fitz-Gibbon, survive him.

Dr. Fitz-Gibbon was a leader in the field of cleft palate prosthetis and specialized in the correction of cleft palates and oro-facial deformities. He invented the Fitz-Gibbon obturator, one of the most widely used appliances for the correction of cleft palate speech. He contributed widely to the outstanding dental and speech journals and to several medical text books on the prosthetic correction of cleft palate and cleft palate speech. Dr. Fitz-Gibbon was a Fellow of the American Association for the Advancement of Science, recipient of A. C. Fones Memorial Award 'for outstanding contribution to dentistry and humanity,' and was chief-of-staff at the Skinner Memorial Clinic at the Holyoke Hospital for more than 25 years. At the time of his death he was Lecturer in the Graduate School of Tufts Dental College, where he was organizing a Cleft Palate Clinic. During the past few years he lectured regularly at Columbia University School of Dental and Oral Surgery and New York University School of Dentistry.

Dr. Fitz-Gibbon took a warm and active interest in the total adjustment of the patient's personality. He was an able speech reeducator as well as a famous cleft palate prosthetist. A large proportion of his practice was devoted to charitable cases.

—James F. Bender

Ray E. Keesey has accepted an appointment as Assistant Professor of Speech and Director of the Speech Clinic at Dartmouth College. For the past two years he has been doing graduate study at Ohio State University.

Mrs. Zelda Horner Kosh has been appointed Special Consultant in Speech to the Arlington County Elementary Schools, Arlington, Virginia.

Arthur Eisenstadt is now in charge of speech work in the College of Arts and Sciences, Rutgers University.

Ruth M. Meulendyke (Mrs. Bruce) is a member of the psychological staff of Rochester Guidance Center on a part time basis. Miss Francena Pearson is in charge of the Psychology Department of the Center. The clinic hopes to increase its remedial services this coming year while continuing the diagnostic and counselling program.

W. Arthur Cable, Head of the Department of Speech at the University of Arizona, was awarded the degree of Doctor of Philosophy at the University of Denver at the close of the past summer quarter. His major work was taken in the School of Speech there, with a concentration in speech and hearing pathology. His dissertation was based on the results of two years of experimentation and is entitled, 'An Experimental Investigation into Acoustic Stimulation as a Theraputic Method for Deaf Children and Adolescents.'

Mrs. Alethea Smith Mattingly, Associate Professor of Speech at the University of Arizona, is to teach in the Department of Speech at the University of Hawaii on an exchange basis for the year 1948-1949. For the first semester Miss Lila Sands, First Vice-President of Zeta Phi Eta, is directing interpretation courses at the University of Arizona. For the second semester Dr. Ruth P. Kentzler, Assistant Professor of Speech at the University of Hawaii, will teach at the University of Arizona.

Mr. George F. Sparks, Instructor in Speech at the University of Arizona, pursued a doctoral program at Stanford University the past summer; and Mr. Lionel R. Scott, Instructor in Speech at the same institution, pursued a doctorate at the University of Southern California.

Dr. Dorothy Doob of the Department of Speech and Dramatics, Hunter College, City of New York, has been appointed Chief of Speech Clinic in the Department of Pediatrics, Out-Patient Department, at The Long Island College Hospital, Brooklyn, New York. Dr. Doob served previously at this hospital for one year in the Speech Clinic.

Mrs. Alice W. Mills, Chairman of the Department of Speech and Director of the Speech Clinic at Mount Holyoke College, is in charge of speech therapy at the Bay State Treatment Training Center in Springfield, Massachusetts. This Center operates for the benefit of children in the area who are victims of cerebral palsy. It has been actively functioning since February. Mrs. Mills supervised speech therapy this summer in the civilian division of the Language Clinic at Massachusetts General Hospital in Boston.

Dr. Ira Hirsh has accepted an appointment as Research Fellow in the Psycho-Acoustic Laboratory, Harvard University. This past summer he taught courses in speech and hearing at Boston University in addition to his laboratory duties.

Of particular interest is Dr. Jack Cotton's private practice in speech correction in connection with productive homestead living. Its aim is to provide maximum assistance to the client at a minimum of cost, for he works on the homestead as he takes remedial instruction. The program has just started, but a report from Dr. Cotton as it gains roots will indeed be interesting. The homestead is located near Norwichtown, Connecticut.

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Book Reviews

Ernest H. Henrikson, Editor*

JOHNSON, WENDELL; BROWN, SPENCER F.; CURTIS, JAMES F.; EDNEY, CLARENCE W.; KEASTER, JACQUELINE. *Speech Handicapped School Children.* New York: Harper, 1948. Pp. 464.

This is a textbook designed to serve particularly two courses: (a) the orientation course in speech correction required or recommended in some states for all prospective elementary teachers, and (b) the pathology or speech correction course, with a mixed enrollment made up of majors in general speech, psychology, child welfare, education, and also majors in speech correction who will for the most part work after graduation as speech correctionists in the public schools. The general tone of the book, therefore, makes it suitable also for in-service teacher-training courses and for physicians, social workers, public health nurses, and psychologists, as well as parents and older speech defectives themselves.

Just who is responsible for helping the speech defective? As this reviewer sees it, the point of view which is receiving increasing attention is that the speech defective must be the concern of all persons in his environment. Even those not immediately associated with him, those in the broader social group who set the cultural patterns and standards of the moment, must and do play a vital part. Their attitudes and knowledge, although not always immediately evident in relation to a particular speech defective, are tremendously influential and significant.

How shall the speech defective be approached? Again, as this reviewer sees it, the emphasis is on the consideration of the whole person in his total pattern of living. Specific exercises performed periodically may still be a part of the therapy, but even they must be evaluated in terms of their influence on the whole person. They must also be closely integrated to the total speech activities of the speech defective.

Speech Handicapped School Children is a book which places main emphasis on the points of view discussed above. Chapter I, 'Speech Disorders and Speech Correction,' Chapter II, 'The Clinical Point of View in Education,' and Chapter IX, 'The Public School Speech Correction Program,' set up a broad frame of reference for the definition of speech defects, the organization of the speech correction program, and the carrying out of speech improvement activities. Furthermore, as Johnson stresses in Chapter II, an exceedingly significant chapter, speech correction work is not something which functions in special strange and devious ways. What is good for the speech defective is good for the 'normal' child too. The problem, as in education generally, is one of adaptation to individual needs. The chapters mentioned embody a specifically implemented philosophy of education (the clinical point of view) of which the point of view for speech correction is one facet.

The remainder of the body of this book considers various speech defects—disorders of articulation and voice, stuttering, retarded speech development, cleft palate and cerebral palsied speech, and speech problems of those with impaired hearing. Each chapter gives a brief explanation of the deficiency under consideration and indicates what the teacher can do, both when there is and when there isn't a speech correctionist in the school system, to help such a defective. The chapter on stuttering contains a 10-point program for helping the stuttering child in the classroom. All suggestions are oriented to the clinical point of view 'for education generally' which dominates the book.

The appendix is quite extensive. Parts of it, such as the material on testing for pitch level and an open letter to the mother of a stuttering child, implement what has been presented in the body of the book. New material is introduced which is aimed more directly at the student of speech pathology. Some of this is in Appendix I, 'Projects for Students;' most of it is embodied in Appendix II, 'Class Demonstration of Cases.'

This book represents an outstanding contribution to the literature of speech correction and of education in general. It does not purport to 'tell all.' It does lay down a significant and challenging background and presents enough suggestions for procedure so that it should prove of real value for orientation and for the actual carrying out of the speech correction program. Speech defectives in particular and

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children in general should profit greatly if the material is digested and applied.

ERNEST H. HENRIKSON.
University of Minnesota

DAVIS, HALLOWELL (Editor). *Hearing and Deafness: A Guide For Laymen.* New York: Murray Hill, 1947. Pp. 496.

Hearing and Deafness is a book which ably plays the dual and all but impossible role of textbook and poular treatise. As a text in audiology the entire volume is applicable. Even the most non-technical parts cover basic information essential for the teacher and therapist who wishes to work with hard of hearing or deaf individuals. The suggested readings at the end of each chapter are well chosen and limited to a practical number. As a guide for laymen and a manual for hearing handicapped persons the book again is excellent. Some sections are necessarily too technical and detailed to interest non-professional readers, but in such places the guide posts are clear so that the reader can quickly select pertinent material.

Hearing and Deafness represents the cooperative effort of fifteen of the top specialists in the field of audiology. These experts have brought together a wealth of information and suggestions which have grown out of extensive experience in the fields of medicine, education, psychology, speech, physics, and other specialties.

The book is arranged in six sections with a total of nineteen chapters. The general order of material is from scientific facts of physics and anatomy to the consideration and treatment of individual and social problems which are brought about by a loss of hearing.

In Part I the editor defines 'audiology' and shows its relationship to other fields of study. He also gives a concise resume of the technique, purpose and composition of the whole book. Indeed the best review of the book would be a reprint of Part I.

Part II, entitled 'Hearing and Hearing Loss,' consists of four chapters: 2, 'Physics and Psychology of Hearing,' and 3, 'Anatomy and Physiology of the Ear,' by Dr. H. Davis; 4, 'Medical Aspects of Hearing Loss,' by Dr. E. P. Fowler, Jr.; 5, 'Surgical Treatment of Hearing Loss,' by Dr. T. E. Walsh. Dr. Davis does a splendid job of simplifying the complex relationship between the physical characteristics of sound and the psychological phenomena of hearing. His chapter on the structure and function of the ear digests a vast body of knowledge into a brief but thoroughly adequate treatment of this most complicated of sense organs. In chapters 4 and 5 Drs. Fowler and Walsh respectively discuss many of the common diseases and damage that may affect the ear. Personal care and ear hygiene are stressed. Medical treatment and ear surgery is explained in terms which most therapists and many laymen can understand. Otosclerosis is described in some detail, and a frank appraisal of the fenestration operation is given. These chapters provide an excellent general orientation and summary of the medical problems of hearing and deafness.

Part III, 'Auditory Tests and Hearing Aids,' has three chapters: 6, 'Tests of Hearing,' and 7, 'Hearing Aids,' by Dr. Davis; and 8, 'The Choice and Use of Hearing Aids,' by Dr. S. R. Silverman and S. G. Taylor. Dr. Davis reviews here the standard tests of hearing, from the crudest forms such as the coin click and whispered voice, to the current techniques in pure tone audiometry and controlled speech reception measures. Both principles and procedures are covered thoroughly and supported by research findings and clinical practice. Printed forms of a number of speech hearing tests are provided in the appendix. The principles and performance of hearing aids are dealt with at some length. A number of generalizations are made concerning the amount and type of amplification desirable in hearing aids. The term 'fitting' of hearing aids is discredited in favor of 'selection' or 'evaluation' of hearing aids. The authors of chapter 8 deal with the questions of who should wear a hearing aid and how he can choose the most suitable instrument. They give detailed instructions on the use and care of an aid and batteries. They provide a list of instruments which have been accepted by the Council on Physical Therapy of the American Medical Association and a troubleshooting chart to help a user locate minor troubles in his own instrument. This chapter is particularly valuable to hearing aid wearers.

Part IV, 'Rehabilitation for Hearing Loss,' includes four chapters: 9, 'Speech Reading,' by M. A. Pauls; 10, 'Auditory Training,' and 11, 'Conservation of Speech,' by Dr. R. Carhart; and 12, 'Military Aural Rehabilitation,' by Drs. N. Canfield and L. E. Morrissett. Miss Pauls discusses the principles, the practice and the teaching of speech reading. No particular method of teaching is espoused, but the term 'speech reading' is used instead of the more common 'lip reading' to denote attention to the whole process of speech. She emphasizes the importance of combining use of a hearing aid and speech reading. Dr. Carhart discusses auditory discrimination and shows what kinds of distinctions are necessary for interpretation of speech. He points out the variability of the problem, depending upon the type and age of onset of deafness. He emphasizes the value of using a hearing aid if there is any residual hearing and

the value of training in listening. In chapter 11 Dr. Carhart takes up the speech problems that result from hearing loss. He outlines the special procedures involved in developing speech in deaf children, in improving speech in hard of hearing children and in maintaining or regaining adequate speech in deafened adults. The authors of chapter 12 describe the aural rehabilitation services which were developed by the army and navy during the war. They make some significant observations on the extent and nature of the hearing problem as it applies to military personnel.

Part V, entitled 'Education and Psychology,' has four chapters: 13, 'From Aristotle to Bell,' and 14, 'Hard-of-Hearing Children,' by Dr. Silverman; 15, 'Deaf Children,' by Drs. Silverman and H. S. Lane; and 16, 'The Psychology of the Hard- of-Hearing and the Deafened Adult,' by Dr. D. A. Ramsdell. Dr. Silverman here gives an historical account of the social, economic, and educational problems of deafness. He documents the progress from the time when deafness was looked upon as mental disability to the present, when special education makes it possible for the deaf to become independent and happy members of society. Next, Dr. Silverman takes up the matters of classification, incidence and detection of hearing impairment. He touches briefly on treatment and prevention of hearing loss in children. His estimate of from 1,500,000 to 2,000,000 children in the United States with defective hearing is based on the study of recent school surveys. Although this estimate is more conservative than the oft-printed 3,000,000, it still is impressive evidence of the magnitude of the problem. He urges the adoption of measures for prevention and early detection and treatment of hearing disorders. In chapter 15 Drs. Lane and Silverman present the problem of educating deaf children. They believe strongly that all deaf children should receive instruction in speech and speech reading with the aim of developing these skills as the principle means of communication. Special methods of assessing the hearing of young children are explained. Emphasis is placed on early detection and careful diagnosis of the disorder. The point is made 'that in general intelligence exclusive of skill in the use of language, the deaf as a group are normal.' Dr. Ramsdell gives a penetrating psychological analysis of the personality responses to a loss of hearing. He accounts for the emotional tensions, depression and bewilderment which frequently result when hearing loss strikes an adult. Dr. Ramsdell's work indicates that the adjustment problem can be alleviated by better understanding of the cause of fear and insecurity. He also suggests that enlightenment on the part of friends and relatives can do much to facilitate proper adjustment.

Part VI on 'Social and Economic Problems' is composed of three chapters: 17, 'Organizations for the Aurally Handicapped,' by B. C. Wright; 18, 'Employment of the Hard of Hearing,' by A. M. Hill; and 19, 'Vocational Guidance for the Deaf,' by Dr. H. R. Myklebust. Miss Wright gives a brief outline of the national organizations and services designed to help the deaf and hard of hearing directly and indirectly. She reviews the histories, the purposes and the current functions of each. Miss Hill discusses realistically the problems of employment for the hard of hearing. While recognizing the need for selective employment, she points out that 'personality more often than the state of a man's hearing is the deciding factor in keeping or losing a job.' Dr. Myklebust defines vocational guidance and shows its relationship to vocational adjustment. He points out the similarities and differences in the problem as applied to the deaf and to those with normal hearing. He recommends a careful appraisal of abilities and interests in making a vocational choice. Like most other recent investigators he contends that as a group the deaf are normal in intelligence, aptitudes and motor skills, but finds that they are retarded in social maturity. He believes that much of the difficulty encountered by a deaf person in adjusting to his work results from emotional maladjustment. Finally, Dr. Myklebust challenges the parents of deaf children and the educators of the deaf to meet this problem of personality development.

Hearing and Deafness is a unique book. In outlining the field of audiology, it meets a need which has been felt for some time. At the same time it supplies that field with a hand tailored introductory text. It is also valuable reading for hearing handicapped individuals and a handy reference volume for all who are interested in hearing disorders. No person dealing with hearing problems, whether physician, nurse, teacher, clinician, therapist, consultant or hearing aid representative, should be without access to this book.

L. D. Hedgecock
University of Minnesota

Minneapolis Public Schools. *Speech Correction In Practice.* Minneapolis Public Schools, 1948. Pp. 114.

This is a handbook written for speech clinicians by a committee of speech correction teachers in the Minneapolis, Minnesota Public Schools. Although authorship is ascribed to the Minneapolis Public Schools, members of the production committee and others who contributed to the book total fourteen people in all. They are:

May E. Bryne, Merle E. Clasey, Margaret J. Sullivan, Alvena M. Blanchette, Sadie M. Carlson, Myfawny E. Chapman, Orvetta K. Hansen, Myrtle R. Holtz, Naomi E. Liljeberg, Lillian F. Read, Berneice R. Rutherford, Eleanor F. Spates, Ella M. Sullivan, and E. Margaret Sullivan.

This first part of the book, the introduction, contains a detailed description of the speech correction program of the Minneapolis Public Schools, including discussions of philosophy, general aim, evaluation, plan of organization, classification of speech disorders, criteria for case selection, administration, the clinician's program including case load, organizing centers, making the survey, etc.; equipment, testing program, class organization, case study procedures including records and forms. In this section the book makes an unusually important contribution to the field of speech correction, since there is at present a dearth of material of this type in the literature. School administrators, directors, teachers, clinicians and also lay people who are involved in plans for speech correction programs in their own communities should find in the experience of the Minneapolis Schools, expressed in these early pages of the book, much helpful information. This material is also applicable to college courses in speech correction or teaching of speech which deal with the organization and administration of a speech correction program in the public schools.

The second and third parts of the book deal with articulatory and voice defects respectively. There is nothing new in these sections that cannot be found in any good speech correction text. Adapted to the Minneapolis program, the standard material on voice and articulation is condensed, simplified and presented in a highly readable form. While the well-trained clinician and the advanced student in speech correction will find little new in these chapters, the classroom teacher, beginning students of speech correction, lay groups and parents will find the material highly orientational. Each chapter contains a review of well-selected, recent research with brief abstracts of each article.

The fourth section of the book deals with stuttering and outlines a three-point approach to the problem: physical, mental and motor, and neurological. A wide battery of laterality tests is offered and described in detail. Many of these are new and original. The mental health program for stutterers includes free stuttering and faking, spasm analysis and elimination of secondary reactions, and spasm handling. A review of recent research on stuttering completes the chapter.

The fifth section of the book is a series of bulletins for parents and teachers. The bulletins cover a wide variety of speech correction problems, and they are designed to be duplicated and given to the parents and teachers of children who are receiving speech correction. Each bulletin explains a problem and offers suggestions to parents and teachers whereby they can help solve the problem. Fifteen subjects are covered, such as sound substitution, how stuttering grows, fears, delayed speech and auditory stimulation for articulatory disorders. While most clinicians use bulletins of some sort to present to teachers and parents, few of these bulletins are published or readily available. The collection of fifteen bulletins, therefore, makes a useful contribution to the field.

The final section of the book is an annotated bibliography on aphasia, cerebral palsy, phonetics, psychology, mental hygiene, semantics, speech correction, speech improvement, textbooks for students, periodicals and pamphlets.

The reader may not agree with the classification of speech disorders given in the book or with the criteria for selection of cases, and he may find much to criticize in the theory and method included. That is to be expected in a book in which the authors have had to make choices, take a stand on issues, and adapt and select material to fit a particular teaching situation. The fact that a committee of fourteen experienced teachers agreed on the content and form of the book to the extent of permitting it to be published is in itself a strong recommendation to the reader of the book's soundness.

Although not a textbook in the usual sense, this book should find a wide use in the speech field. It stands as an invitation to other large city programs to make their plans available to those who can profit much from learning about them.

E. C. Fossum
Iowa State Teachers College

Rutherford, Berneice R., *Give Them A Chance to Talk, Handbook on Speech Correction of Cerebral Palsy.* Minneapolis: Burgess Publishing Company, 1948. Pp. 116.

This essay on speech therapy in cerebral palsy by Berneice R. Rutherford is important for many reasons. It is the first homogeneous text on this subject to be presented by a qualified and competent worker in this area. Miss Rutherford's long experience with cerebral palsied children at the Dowling School, her many single studies of this condition, and her general ability as a clinician entitle her to write with authority. The presentation is empirical, but there are practically no controlled studies of cerebral palsy. Also, cerebral palsy is a highly complex neuro-

physiological condition, extremely difficult to simplify for such a report as this. Miss Rutherford has done rather well to avoid the many technical snarls.

Cerebral palsy is presented as a three-fold condition—the spastic, the athetoid, the ataxic. The conditions are attacked in a similar way by means of kinesthetic, auditory, and visual cueing, very little difference being made clinically between the approaches. The author cautions that each case is individual, and the technics must be designed to fit the linguistic developmental frame of the child, which is presented as 1. physical action, 2. babbling, 3. development of speech sounds, 4. word formation and blending of words, and 5. language building. This reviewer heartily agrees with this concept. In addition, a number of special problems are presented dealing with strengthening, breathing, swallowing, relaxation, extraneous movements, rate, rhythm, pitch and intensity; other speech disorders found in cerebral palsy, and the importance of personal adjustment.

If it is necessary to find areas to criticize in this book, this reviewer would question the material on 'strengthening,' since strengthening is actually a small facet of clinical approach. Further, the section on swallowing could have been improved by a study of the chewing and sucking reflexes and a somewhat more complete analysis of swallowing itself. The technics used to improve swallowing appear to be not the most conducive to improvement, except in the most skilled hands. In fact, the danger in this manual is that it may be used as a guide by inadequately trained persons. It would not be useful for this purpose. However, for an individual fully trained and competent, it contains much useful material.

Miss Rutherford deserves the gratitude of the profession for having translated her long experience on paper and for having opened the door to further texts so badly needed in this portion of the speech correction field.

MARTIN PALMER
Institute of Logopedics

BLAU, ABRAM. *The Master Hand.* New York: Research Monographs, No. 5, American Orthopsychiatric Association, 1946, Pp. 199.

This reviewer is particularly happy to review this book, since it concerns itself with a problem that has been of scientific and clinical interest to him for many years. Its appeal today lies in the fact that it bridges the gap that may appear to exist between the neurological and psychological concepts of sidedness. Some of us have felt that cerebral dominance is intrinsic within the organism, although alterable and modifiable by environment. The thesis of the present book is that the organism possesses inborn bilateral potentialities and that cultural forces decide the dominant side. The author supports this thesis by an examination of old facts according to two emphases: 1. the total viewpoint, and 2. the clinical method. There will be those, including the reviewer, who may feel that the author's methodology is his weakest point. If his assumptions can be accepted, his reasoning and deductions are sound. Regardless of the acceptance of his assumptions, the book is stimulating, suggestive and integrative.

From the standpoint of the speech pathologist, the main interest of the work is in relation to stuttering. The author does not deny the statistical relationship between cerebral dominance or sidedness and stuttering. He objects, however, to the interpretation of this relationship as advanced early by this reviewer and his students. The author's interpretation of the relationship is that both stuttering and sinistrality are the essence of a defiance to environmental restrictions. The sinistral personality and the anal and compulsive character of stuttering have a contemporary history in the problems of early infancy. The child refuses to acceed to the environmental directives with a resulting conflict between urgent desire and its defense.

At present, the reviewer is sympathetic with the whole point of view of this interesting work and would like to recommend it to all serious students of speech pathology and psychology.

LEE EDWARD TRAVIS
University of Southern California

HOOTON, EARNEST. *Young Man You Are Normal.* New York; G. P. Putman's Sons, 1945. Pp. 210.

Earnest Hooton, anthropologist and author, was selected to present to the lay reader the report of the Grant Study of the Harvard Department of Hygiene. The Grant Study, covering a period of six years, investigated 268 'normal' young men enrolled at Harvard University. Dr. Arlie Bock, Professor of Hygiene at Harvard, recruited a staff of physicians, anthropologists, psychiatrists, psychologists, physiologists, and sociologists to study independently this sample of men. After gathering their data on this experimental group of 268 'normal' men, the specialists combined their findings on physique, mentality, temperament, and social adaptability. Earnest Hooton, in his preface to this volume, makes it very clear to the reader that he was in no way associated with the study and has no obligations in writing this report. His sole purpose is to make known generally the result of this study of the 'total man.' The book fulfills the assign-

ment of popularizing a scientific study. The author has an engaging style which shows evidence of a fine sense of humor.

An in other endeavors to popularize scientific studies, it would seem that oversimplification tends to confuse rather than to clarify. To this reviewer, simple, concise charts showing the results of the study would have been more meaningful than the many pages of words used to express these same results. The professionally trained reader will also note the absence of many statements of fact necessary before certain conclusions concerning percentages and correlations can be made. The reviewer is certain that Hooton is not unmindful of these omissions and was guided by the audience to which this volume is directed. Although the sophisticated reader may be disappointed in the absence of supporting evidence, the lay reader will not experience difficulty in comprehension.

There are three parts to this book: Part I, What the Normal Young Men Are Like; Part II, How the Elements Are Mixed in 'Normal Youths;' Part III, Conclusions and Speculations: How to Help Men Find Themselves. The first part deals with the selection of the experimental group and a description in terms of physique, health, social and economic background, intelligence, personality, tastes and activities, worries and problems, religious beliefs and attitudes. Part II attempts to set down the results of the findings in terms of relating and inter-relating the abovementioned factors. Results are stated entirely in terms of percentages which are compared in different combinations. A major contribution to confusion in this section is the system of classification of factors studied. There is no indication that mutually exclusive factors are being studied. Hooton points out (p. 63) that 'In some cases the lines of demarcation between traits seem somewhat foggy and indistinct.' In Part III there is a summary of the follow-up study on 259 of the original 268 men who participated in the study. The author also gives his own summary comments and interpretations of the study as a whole. He states (p. 183), 'The most obvious and practicable approach to the analysis of the total man is through his physique, because that is flesh and bones, hair and teeth, blood and water—matter measurable, describable, and tangible.' This presents a challange to the scientists whose major approach has been a study of the environment.

Hooton expresses strongly his feelings that similar studies of individual undergraduates should be undertaken and analyzed for the purpose of aiding the individual in his adjustment. He believes the most urgent task in the study of the science of man is 'to find out how human qualities combine in individuals and how best to utilize the combinations that exist rather than to try, immediately to make better combinations.'

Despite the limitations indicated, the book is stimulating and informative. Speech and hearing therapists should include it in their readings to understand further the dynamics of the normal person.

RUTH K. STEER
M. D. STEER

Purdue University

HENNEKE, BEN G. *The Radio Announcer's Handbook*. New York: Rinehart, 1948. Pp. 308.

This reviewer, after wading through an incredible number of books alleged to cover the fields of radio speech and announcing, written by announcers who know little or nothing about speech, or by teachers of speech who have at best an academician's-eye view of radio, finds it a relief to read one written by a man who knows a good deal about both. Mr. Henneke writes from long experience as a professional worker in radio and as a teacher of speech and radio at the University of Tulsa. *The Radio Announcer's Handbook* is frankly designed to meet the needs of the person interested in professional performance, whether he is actively employed in the field of radio or is preparing himself for such employment. Many teachers of radio in liberal arts colleges may find the occupational emphasis disturbing, but even where the course objective is an orientation to this important field of communications and the effective utilization of a new medium for non-professional performance, this book will provide a valuable supplement to the many excellent texts which cover the social implications as well as the professional demands of the medium.

Speech pathologists with broad training in psychology will find Mr. Henneke's concept of 'personality' somewhat different from their own, but it is carefully defined, at least by implication. His point of view is not, like the mule, without some pride of ancestry, and perhaps even hope of progeny.

Writing in a field in which oracular and speculative evidence is too often used by those who should be familiar with experimental evidence, Mr. Henneke appears to apply some of what is most practical in contemporary speech research without doing so obtrusively or laboriously. Occasionally, however, he seems either to lack familiarity with such research, or demonstrates a tendency to substitute emperical for experimental evidence. He does so, however, with a refreshing and highly

personalized frankness, which leaves the reader in no doubt about the source of his opinions. If it is true that the effective teacher who is not concerned with research tends to be an effective teacher of things that aren't true, the auther avoids that error.

The Radio Announcer's Handbook covers such matters as the qualifications, physical and educational, for the successful announcer; emphasizes the announcer's skills in somewhat informal but at the same time meaningful language; describes the announcer's duties; and includes a long section of exercises which are singularly happily chosen.

This reviewer is pleased to see that *The Radio Announcer's Handbook* is not just another compilation of speculative material bound in handsome covers to clothe its intellectual nakedness, but it is a forthright, practical approach, unpretentious in style and format, and one which should be especially helpful in those situations demanding a pre-professional orientation.

When Degas was asked whether or not he considered himself a good painter, he replied, 'Yes, if I compare myself; no, if I judge.' Mr. Henneke's book comes off reasonably well by either standard.

E. W. Ziebarth
University of Minnesota

Preston, George H. *The Substance of Mental Health.* New York: Rinehart, 1943. Pp. 147.

The review in a scientific journal of a book without a footnote, a book which lacks an index, and which is presented so informally, may by some be held inappropriate. But *The Substance of Mental Health,* in pleasant narrative, well achieves Doctor Preston's succinctly stated objective: *Many of us assume mental health to be our right. This book deals with what lies behind that right, how we come by it and how we may pass it on.*

The book, as it is written (with its Thurber-like illustrations by the author), permits the reader to enjoy an intimate conference with an able and sensible man who has a rich, experiential background to help make easier the 'problems of living.'

It is indeed a relief to find in timely, vivid writing such a sane, common-sense point of view. No one could well omit from a text of this sort, sex and its ramifications, but to have confined it within acceptable limits and to allow proper emphasis for security, 'ordinary inter-personal relations,' family, obedience, ego- and alter- centricity, is a wholesome and cleanly relief.

Doctor Preston presents a definition: 'Mental health consists of the ability to live: (1) within the limits imposed by bodily equipment, (2) with other human beings, (3) happily, (4) productively, and (5) without being a nuisance,' and then comforts us by the fact that sanity 'follows no rigid formula according to which each individual must be moulded. It does not demand any fantastic state of complete understanding in which the possessor never dances with rage nor weeps with sorrow. It allows room for love and hate and revenge. It excludes neither all saintliness nor all sin. It represents a compromise between what we are and what we must do if our fellowmen are to accept us as one of themselves.'

To speech correctionists, Chapter V, 'You Learn What To Expect,' offers a significant and provocative excursion in Semantics. The need of mental health for proper understanding 'that the child has a chance to learn meanings' is made a real challenge.

Not in the spirit of criticism but of inquisitiveness, a reviewer might question the relative weight which the volume places upon heredity and environment. But even here the resultant of Doctor Preston's writing has practical value: 'Today none of us believes that poor heredity forms an absolute and final barrier to mental health but, on the other hand, we are equally sure that the best heredity in the world cannot guarantee mental health in the face of serious accident or drastic mishandling.

The essential attitude toward heredity is one of respect, but not fatalism. . . . While heredity does not determine mental health it does set certain limits, but even these limits can be modified.'

The book is pleasant reading to those professionally interested and could make a real contribution to the thinking of those *not* technically trained. For the *latter group* it supplies sane information for their guidance and to the *former group* it will prove stimulating, an illustration of effective style and the value of simplicity.

Yale S. Nathanson
Temple University

Neuschutz, Louise. *How to Help Your Hearing. (Rev. ed.)* New York: Garden City Publishing Company (Blue Ribbon Series), 1947. Pp. 171.

'Oh, you're hard of hearing too!' is an observation that often initiates better understanding by a person who suddenly loses his hearing. Louise Neuschutz has been hard of hearing for years and has helped so many persons similarly handicapped that she can now offer 171 pages of advice to them in her revised edition of *How to Help Your Hearing.*

The book is replete with inspiring suggestions, promises and explanations that permit one to proceed to self-help with the same determination that brought successful living to Miss Neuschutz. In a business-like manner, she tells in the first section of the book how to meet the problem; in the second section, how to adjust oneself; in the third, how to keep mentally and physically fit; in the fourth, how to be good company to oneself; and in the fifth, how people with normal ears can help people with reduced hearing.

One of the commonest and most necessary instructions that teachers give to those suddenly handicapped is to face the facts—and act. This is good advice both for the individual and for the parents and friends of such persons. Inability to face the facts keeps one handicapped. Accepting the handicap permits one to climb to untold heights of happiness and success, material or spiritual or both. Compensation makes up for physical limitation; eyes help ears; science gives wires and amplification for better hearing.

How one adjusts to the world is subtly told by revealing stories of young and old who did it by the hard way, by work, by study and by determination. The art of being deaf, relates Miss Neuschutz, is to learn to get along naturally and gracefully in a hearing world, while at the same time to make the silent moments golden.

The complexes for fear and worry, of suspicion and morbidity, inattention and escape from reality can be avoided by helping others and by riding a hobby horse or two.

This book should be read by every hard of hearing person and by parents of such children. The school teacher could well profit by reading how to help the hard of hearing child. The nurse can guide and inspire the handicapped by using suggestions offered in this book.

WARREN H. GARDNER
The Cleveland Hearing and Speech Center

MORLEY, MURIEL E. *Cleft Palate and Speech.* Baltimore: Williams & Wilkins, 1945. Pp. 160.

The author of this book served for six years under W. E. M. Wardill, F.R.C.S., as speech therapist to the Royal Victoria Infirmary at Newcastle-upon-Tyne in England, and has incorporated in this book the greater part of a thesis done originally for membership in the British College of Speech Therapists.

The book is designed to bring the surgeon and the speech correctionist closer together. The author accomplishes this by clearly and concisely explaining and relating the work of both. The point is made that too often the surgeon has no real knowledge of cleft palate speech, and the speech teacher has an inadequate understanding of the anatomical and physiological problems.

The author endorses the claim, in the light of her experience with a large number of cases, that surgery performed at a suitable age obviates the need for speech training. She admits, however, that in many cases the competence of the velar-pharyngeal sphincter cannot be achieved by surgery alone.

The book describes for the student of speech correction the development of the face and mouth in embryo and explains the occurrence of congenital clefts of lip and palate. The anatomy and function of the oro-pharyngeal mechanism is outlined and illustrated, and an excellent story of the development of cleft palate surgery is included with a description and colored illustration of the principal operative methods.

One chapter is devoted to the stages of speech development and a discussion of deviations likely to occur in the child with a cleft palate. There are numerous suggestions given for treatment, some of which are original. The author recognizes that every case is unique and states that a method of treatment helpful to one patient may be of no use to another.

Typical defects in cleft palate speech are classified and discussed in relation to conditions obtaining before and after surgery. The material on treatment deals with conditions influencing prognosis, cooperation between patient and therapist, group and individual therapy, and the problem of when to begin speech correction. The usual breath direction and blowing games are suggested, and methods are presented for correcting articulatory errors in both adult and child cases.

Twenty-three case histories are given to demonstrate special points which often arise in therapy.

Miss Morley's book should be read by every speech correctionist and every surgeon interested in cleft palate problems.

KENNETH SCOTT WOOD
University of Oregon

JOURNAL OF SPEECH AND HEARING DISORDERS, 1948, **13**, 393-396

Abstracts of Current Articles

Mary Huber, Editor*

NOTE: *The editor of Abstracts of Current Articles offers the suggestion that members of the Association who publish articles on speech and hearing disorders in other periodicals submit to this department reprints or signed abstracts of those articles. The authors of the articles may abstract the material themselves, have a student or colleague abstract it, or send the reprint to the editor for abstracting. In the process of abstracting it is imperative, of course, that the writer observe carefully the editoral style employed in this department, being sure to include the full name of the author, the title of the article, the name of the journal, the year, volume number, and page numbers.*

All abstracts are signed by the writers, and the name of the institution with which they are associated is included. The editor would like to suggest that members who teach courses in speech correction encourage students to contribute abstracts to this department, as it is good experience for them and helps them to develop the habit of keeping in touch with the current literature of the profession. (Mary Huber, Brooklyn College).

ADAMS, W. S. The hearing level eleven years after partial intracranial division of the eighth nerve for vertigo. *J. Laryngol. Otol.*, 1946, **61**, 505-507.

The case record of a patient who had a hemisection of the eighth nerve is presented two years after the successful operation. The patient was a twenty-nine year old woman who had attacks of giddiness and vertigo with deafness and occasional discharge from her left ear for fifteen years. A section of the anterior ⅝ of the left auditory nerve was made in the posterior cranial fossa, because her symptoms indicated more than a labyrinth, dysfunction, and it was not desired to perform a destructive left labyrinth operation through an infected area. Her symptoms practically disappeared a week following the operation.

After two years, examination showed she could hear tuning forks between 2048 and 64 d.v. on both sides. A.C. audiograms showed a high tone dip on both sides. The Weber was referred to the left, and bone conduction was shortened on the right. The right Rinne was positive and the left negative. There was no spontaneous nystagmus. Findings indicated that the hearing in her left ear had not changed during the eleven years. The patient was still a little unsteady, and occasional attacks of giddiness occurred. (*Frank Robinson, Ohio State University.*)

AUERBACH, ALINE B. What is a problem child? *Child Study*, 1948, Spring.

It is easier to accept unusual or difficult behavior of children if one understands the reason for it. Children's behavior has meaning. Many of the reasons for what a child does and how he does it lie deep in his past and are quite unconscious. Often parents can get help from a wise doctor or public health nurse, a teacher, or a counselor in a guidance clinic.

There are three tests by which we may judge whether a child's problems are close to normal or more serious. First, it is significant if they persist too long. Second, will they respond to common-sense handling? Third, is the child's behavior logical and appropriate?

It will be helpful if parents can learn to think of exceptional or objectionable modes of behavior as symptoms of something in the child that needs to be remedied. Parents, themselves, should not try to diagnose emotional difficulties. They should consult professionally trained counselors who can decide how serious a child's difficulties are and can suggest and supervise remedial procedure. In many cases, parents themselves should undertake treatment. They should give their children the best love and care they can for healthy emotional growth. If the situation gets beyond their control, they should find the best professional help available. (*Juliet H. Lewis, Brooklyn College.*)

AMOS, M. LORRAINE. Speech rehabilitation for veterans. *The Quarterly Journal of Speech*, 1948, **34**, 72-79.

According to latest data, there are nearly 49,000 cases of World War II veteran disabilities which might cause or result in speech disorders. The Veterans Administration has developed two speech rehabilitation programs for coping with this problem.

The medical program, established in the Department of Medicine and Surgery, involves medical and surgical care, corrective therapy, physiotherapy, and occupatonal therapy. This program is limited to the treatment of disabilities incurred in or aggravated by active military or naval service.

The vocational rehabilitation program,

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under the Office of Vocational Rehabilitation and Education, is designed to provide specialized restorative training to veterans with handicaps of speech impairment which detrimentally affect satisfactory employment or the successful pursuit of vocational training. Institutions such as colleges, universities and hospitals provide the veteran with training selected on the basis of the particular type or types needed.

The author points out the specific kinds of speech and associated disorders to which the two programs give their attention. (*Anna B. Duke, Brooklyn College.*)

BLACK, MARTHA E. Speech correction in Illinois. *Q. J. Speech*, 1948, **34**, 213-215.

The 1947-49 biennial appropriation made by the Illinois General Assembly for the state speech correction program is $1,132,577. A special education law authorizes financial reimbursement to those school districts which provide educational programs adjusted to the needs, interests and abilities of their handicapped children. This liberal financial aid has made it possible for more than 100 districts to establish programs in which about 8,000 school children receive therapy.

The service supplied is limited only by the number of qualified teachers. The Illinois state program requires that a person, in addition to having a teacher's certificate, must have 24 credit hours of specialized training plus 200 clock hours of supervised clinical work. These are the minimum qualifications for a speech correctionist. The state is anxious that a considerable number of its speech teachers have master's degrees and that a somewhat smaller number have had work at the doctorate level. Recruits from the ranks of experienced teachers are particularly welcome. More men are needed, too, for there are certain situations where the masculine point of view is needed.

The following practices have become generally accepted. First, a case load should fall somewhere between 70 and 100 pupils, and every pupil should be seen at least twice a week. Second, one-half day per week should be kept free for record work, parent-teacher conferences, home calls and visits to regular classrooms. Speech correction is always regarded as a part of and not apart from the entire school program. (*Pauline Fraider, Brooklyn College.*)

DORRANCE, C. M. and BRANSFIELD, J. W. Studies in the anatomy and repair of cleft palate. *J. Surg., Gynec., and Obst.* 1947, **84**, 878-885.

The normal physiologic action for closing off the nose from the pharynx is attributed to the contraction of the outer fibers of the superior constrictor muscle. This pulls the posterior wall of the pharynx forward and permits the inner portion of the superior constrictor muscle to act as a sphincter and produce closure. It is well known that suturing together the two sides of a cleft palate, as in the Langenbeck operation, usually does not produce normal speech. However, if the palate is displaced backwards, the circular portion of the superior constrictor becomes capable of obtaining velopharyngeal closure and normal speech ensues (the push back operation.)

The fact is emphasized that in the usual patient the surgeon has only one chance to produce a perfect palate; therefore, extreme care and study should be given to each case. 'Early operations are not at all essential; in fact, failure in cleft palate repair in very young children is now so common that we do not advise operative work being done on a child until about the fourth or fifth year. Our feeling at present is that the most favorable time to operate is from the fourth to the sixth year. We find that the speech in our average case is better than when we operated earlier.' The authors also believed the mortality rate is lower for operations in the later years than in the first year.

The value of the push back operation for congenitally short palates and for clefts of the soft palate is emphasized. For complete clefts, either unilateral or bilateral, more involved surgical procedures become necessary, but all should be some modification of the push back method. (*Frank Robinson, Ohio State University.*)

FAIRBANKS, L. C. Influence of recent research on present etiologic concept of malocclusion. *J. Amer. Dent. Assoc.*, 1948, **36**, 188-195.

Recent research has had a most favorable influence on the concept of the causes of malocclusion. In fact, the present concept assures a more adequate understanding of orthodontic problems and gives the orthodontist a more positive approach to case analysis and treatment planning. The most noteworthy results of recent research concerning the structures of the face and jaws may be summarized as follows:

Interstitial bone growth does not exist. Growth of cartilage in the mandibular condyle does occur by interstitial proliferation and by apposition from the deepest layers of the covering fibrous tissue.

At no time in the life of a person do heredity and environment operate alone. All the inherent factors and environmental influences must be maintained in perfect and normal balance for the normal development of occlusion.

Growth of bone in the maxillae and mandible is one of the forces of eruption.

The present concept discards Angle's postulate concerning the integrity of the thirty-two teeth in many cases of malocclusion.

No growth takes place in the body of the

mandible anterior to the first molars after their eruption. All bone growth occurs by surface addition. Orthodontic treatment will not stimulate bone growth.

Stability of the dentition is dependent on correct positioning of the teeth over foundation bone.

Permanent and lasting results in establishing esthetic and functional occlusion depend on the structural limitations of inheritance, environment and functional adaption. (*Marilyn L. Nober, Brooklyn College.*)

FRIEDLANDER, H. F. The recalling of thoughts. *Brit. J. Psychol.* Jan., 1947.

The problems of the author in conducting his experiments are twofold. (1) To ascertain if human beings can think without images, and (2) to discover if a thought can be completely detached from verbal expression.

After experimenting on himself, the author bluntly states that there is no direct recall of a thought separated from its verbal expression or any other sensual support. He claims that we often forget the original wording when we try to recall thoughts, but they are replaced by new expression of similar meaning.

As for the dependence of thought on verbal expression, the author used the method of comparing the retention of thoughts expressed in the mother tongue, with the retention of thoughts expressed in a foreign language. However, he used only three subjects besides himself for this experiement and decided that he could not conclude for or against imageless and verbal thought content. The author achieved better results in the retention of thoughts expressed in the native tongue, while his subjects were indifferent to the use of another language. (*Felecia Santora, Brooklyn, College.*)

FROESCHELS, E. Testing the hearing of young children. *Arch. Otolaryngol.*, 1946, **43**, 93-98.

Dr. Froeschels asserts that it is essential for the development of speech of the hard of hearing child to examine the hearing early in the life of the child. As the audiometric method is not practicable when applied to a very young child, the method of direct introduction of tones should be used, even though the findings are not as exact as those of audiometry. If hearing throughout the full range of the whistles or at least throughout a considerable part of that range can be detected, stimuli should be introduced into the ear of the child with the help of a hearing tube. The stimuli should consist of musical sounds, monosyllabic words and, at a more advanced stage, words containing two and more syllables, increasingly longer phrases, and so on; in other words, a system of sounds imitating the sounds and noises reaching a child of normal hearing. (*Phyllis E. Paull, Brooklyn College.*)

GOOCH, JAMES O. and HALLBERG, O. E. Surgical treatment of Meniere's disease in a deaf-mute. *Mayo Found., Rochester, Minn. Proceeds. Staff. Meet., Mayo Clinic.* 1947, **22**, 252-254.

A report on the surgical bilateral destruction of the labyrinth of a 23-year-old man deaf since birth. The man complained of episodes of dizziness, nausea, and vomiting which had been present all his life, but at the time of registration at the Mayo Clinic these symptoms had become so severe and persistent that he was unable to do satisfactory work at his job as a printer's helper. For two weeks prior to seeking advice he had obtained practically no relief. Vertigo was of such severity that he would fall down. Relief treatment for the patient was first attempted by intravenous injection of 50 milligrams of benadryl. The effect of the measure was mild aggravation of the symptoms. The bilateral destructive labyrinthotomy was then performed, and the patient was observed at intervals for 9 months following the operation.

Constant improvement in all subjective sensations was noted by the physician and reported by the patient. The man returned to work and reported constant attendance with only mild, occasional sensations of dizziness. These symptoms were not accompanied by nausea or other distressing symptoms. The patient had some difficulty in vision typical of anyone who has sustained loss of labyrinthine function—in this case an unusual type of nystagmus and a tendency to overshoot when the eyes were turned from any position back to directly forward. This continued briefly, in pendulum fashion, until the eyes fixated the object. (*Frank Robinson, Ohio State University.*)

ST. JAMES, ROBERTINE. Help your cerebral palsied child. *Crippled Child*, 1948, **25**, 4-6, 26-27.

The first need of parents has been to comprehend the nature of cerebral palsy. It has been defined as a disturbance of muscle function due to brain damage. There is no cure, but there can be levels of improvement commensurate with the initial handicap, the personal drive of the child, and the treatment program which is carried out. The ultimate objective for the grossly handicapped individual may be speech, sitting balance, or independent feeding.

A sincere evaluation of the mental and physical potentialities of the child must be made by those who thoroughly understand all of the problems of cerebral palsy. Following this, there should be a designated training period with recurrent examina-

tions to offer substantial evidence of the treatability or non-treatability of the child.

Under the direction of the physician, the trained physical therapist, occupational therapist, and speech therapist, it is possible to establish and follow a home treatment program which will be both effective and worthwhile. *(Pauline Fraider, Brooklyn College.)*

SNIDECOR, J. Why the Indian does not stutter. *Quart. J. Speech*, 1947, **33**, 493-495.

The author, in his studies of the Bannock and Shoshone Indians, found that, compared to the white population of the United States, the number of stutterers is amazingly low. In a group of 800 Indians not one pure-blooded Indian was a stutterer.

The following are the causes for the rare occurrence of stuttering given by the author. First, there is no interference on the part of the parents as to whether or not the child should use his right or his left hand, as left handedness is not considered a problem among these people. Second, it is assumed that the birth is easier on the child as the Indian mother is incapacitated for a comparatively shorter time. Those infants that are injured at birth have less chance to survive. No cerebral palsy was observed in these tribes. Third, the Indian parent exerts very little pressure on the child to speak. Adequate social adjustment depends far less upon the individual's ability to speak than in our society. Finally, there is no word for 'stutterer' in their language, hence the individual is not likely to be labelled a stutterer.

The author says that though neurotic tendencies are probably akin to those of the white population of this country, as the Reservation Indian appears to experience the same degree of tension, the affect of this on the number of stutterers can be clearly seen in view of the previously given four reasons. *(Hilda P. Goldberg, Brooklyn College.)*

SORENSEN, M. B. Speech correction—via airways. *Crippled Child*, 1948, **25**, 12-13, 24, 30.

Miss Sorensen accepted a job teaching speech correction classes for the University of Nebraska Extension Division. However, the job involved travelling hundreds of miles each week. The problem was solved by travelling via airplane.

Off-campus courses in speech correction began in the fall of 1943 with a class for teachers and a clinic for children at Weeping Water, Nebraska. During the 1946-1947 period, more than 500 university students and small children were serviced in more than 2,500 pupil visits. These courses are designed to help teachers learn how to work with their children with speech problems, and also to give the teachers supervision in their first work with the child.

The average off-campus class meets once a week for eleven weeks with two and a half hours of intensive study each evening. The work involves text book study, lectures, discussion, a final examination, and actual work with a child who has a speech difficulty.

During the first half hour each member of the class with the help of the instructor makes detailed plans for her work with the child. As the first half hour ends, the parents begin to bring their children, and members of the class move to some corner of the room to work with their child. The instructor supervises and gives suggestions. As the instructor notices problems arising, she remembers them and brings them up at the next discussion period. *(Pauline Fraider, Brooklyn College.)*

TEMPLE, W. J. Serviceable speech in a democracy. *Quart. J. Speech*, 1947, **33**, 489-492.

Education for democracy is ideally education of all the citizens for personal liberty and social responsibility. One of the most desirable characteristics of a useful member of a democratic society is the ability to speak one's own language correctly and effectively. A person who cannot speak effectively is limited in the extent to which he can work cooperatively in common enterprises and contribute to the common good of his groups. Therefore democratic society cannot overlook speech education (cultivation of good speech) and speech correction (training of those with defective speech).

If the ability to speak correctly and effectively is an important goal of liberal education, why do not speech education and speech correction stand equally important in school budgets. Surveys show that a significant percentage of school children have defective speech. The speech correctionist sets his goal for both the physically handicapped (stutterers, aphasics, the deaf, etc.) and the articulatory and voice cases as the serviceable speech by which people live and work with each other—that is, speech that is audible and intelligible rather than 'beautiful' or 'perfect,' for people's ideals of the latter are neither uniform nor consistent.

Speech correction serves democracy by training handicapped people to become self-respecting, contributing citizens, by practising and teaching tolerance for individuals and groups of people who are not quite like ourselves, and by working toward realistic goals for defective speakers. A democratic society needs speech correction. *(Eloise Ann Turken, Brooklyn College.)*

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